ENVIRONMENTAL ASSESSMENT
USDA Forest Service
Soda Creek/North Butte Allotment
Almanor Ranger District; Lassen National Forest
Plumas and Butte Counties, California

The Soda Creek/North Butte Allotment (27,267 acres NFS) is located in Plumas and Butte Counties in Township 27 North, Range 5 East, Sections 32-36, 25, 27-28; Township 27 North Range 6 East, Sections, 29-32; Township 26 North, Range 4 East, Sections 13, 24; Township 26 North, Range 5 East, Sections 1-5, 8-12, 13-18, 19-28, 33-36; Township 26 North, Range 6 East, Sections 5-9, 16-22, 27-33; Township 25 North, Range 5 East, Sections 1-3, and Township 25 North, Range 6 East, Sections 5-7, Mount Diablo Meridian.

INTRODUCTION

The Soda Creek/North Butte Allotment is located on the Almanor Ranger District, in Butte and Plumas Counties southwest of Chester, California. The allotment totals 28,837 acres, Forest Service administers 27,267 acres of National Forest System (NFS) lands and 1,150 acres are privately owned.

The allotment contains the following creeks and intermittent streams: The Soda Creek Unit is in the Lower North Fork Feather River Watershed, including Soda Creek and tributaries (Panhandle, LT Creeks), Grizzly Creek and tributaries (Sawmill Tom, Rock, Slate), and Yellow Creek. The North Butte Unit is within the Butte Creek Watershed and includes Butte Creek and tributaries (Willow, Scotts John Creeks).

The Term Grazing Permit for Soda Creek/North Butte was signed in 2001. The livestock grazing management systems used by the permittee includes the use of private areas. The allotment is identified on the attached Map 1.

PROPOSED ACTION

The Almanor Ranger District, Lassen National Forest proposes to continue authorized grazing in the Soda Creek/North Butte Allotment under an adaptive management system order to progress towards meeting desired conditions, as described in the Lassen Forest Plan, for rangeland vegetation condition, stream condition, and forage utilization. The proposed adaptive management system consists of defining forage utilization standards, monitoring resource conditions, and adapting management activities based on the results of monitoring.

The proposed action would revise the Allotment Management Plan (AMP) for the Soda Creek/North Butte Allotment, which is a special management provision to the grazing permit. The AMP (Appendix A) provides a summary of information for the allotment along with five elements designed to move the allotments toward the desired condition. These elements are: (I) Resource Objectives; (II) Management Requirements; (III) Rangeland Improvements; (IV) Monitoring and Evaluation; and (V) an Adaptive Management approach to future adjustments in livestock management.

The following description includes the main constraints or sideboards that are applied to management activities, such as the maximum number of livestock, duration of grazing, and forage utilization standards.

I. Resource Objectives (AMP Section I, pages 2-3) - Cattle grazing would be authorized in a manner that moves toward Forest Plan goals, objectives and desired conditions as described in the Lassen NF Land and Resource Management Plan, Record of Decision (ROD), 1/11/1993, and as modified by the ROD for the Sierra Nevada Forest Plan

Amendment (SNFPA), 1/21/2004. This plan is also in accordance with the Long-term Strategy for Anadromous Fish-producing Watersheds (Butte Creek watershed; North Butte Unit) which stems from PACFISH (USDA & USDI 1995) as described in SNFPA ROD 2001 & 2004.

The grazing standards and guides that would be applied (listed in the AMP (pages 7-8) and described in this document on page 3) are primarily associated with Riparian Management Objectives (RMOs) and Riparian Habitat Conservation Areas (RHCA) for North Butte Creek Unit (anadromous), and Riparian Conservation Objectives (RCOs) for the entire allotment. RCOs are described in SNFPA 2004, ROD-33, and encompass many of the same elements for management of RHCAs. The allotment's resource goals and objectives are primarily associated with RCO2, RCO5 and standards and guides #117, #118, and #119 which are included in the AMP (pages 2-3).

A primary objective of the AMP is also to support the permittee's ability to self monitor and comply with permit terms and conditions (AMP page 3).

The current condition of the Soda Creek/North Butte Allotment is described on pages 3-4 of the AMP and page 5 of this document. Studies at Milkhouse, Yellow Creek, and Little Grizzly areas resulted in moderate condition ratings. Moderate functional status is considered to be satisfactory condition. Vegetative trends as well as overall 5 year trend were determined stable.

Resource objectives would be applied to the main areas of primary or secondary National Forest System (NFS) rangelands within the allotment including key areas at the Little Grizzly (a), Milkhouse Flat (b), Ben John (c), Yellow Creek (d), and LT Creek (e) areas as shown on Map 2. Objectives would also be applied to areas in the Sawmill Tom and Rock Creek drainages, the North Fork of Willow Creek (f), Big Meadow (g) and areas in the Butte Creek drainage.

II. Management Requirements (AMP Section II, pages 6-11) - There is presently one term Livestock Grazing Permit associated with the Soda Creek/North Butte Allotment (27,267 acres).

1) Authorization Criteria - The proposed authorization criteria is described on page 6 of the AMP and summarized below.

Current System - 2001 Permit to present - The allotment is administered within an On/Off term (ten-year) grazing permit where the allotment boundaries include both National Forest System Lands and private lands that are managed as one allotment. Allotment management involves the use of the two units together with approximately half of the herd distributed onto private lands. The 2001 permit for Soda Creek/North Butte authorizes 27 cow/calf pairs (on), 27 (off), for a total of 54 for an average period of 6/16 to 9/15 or 3.06 months (92 days) period of use. Total authorized use under the 2001 permit is 218 AUMs on NFS lands (based on one AUM being equal to the forage requirement of a 1000 pound cow with a calf less than 6 months of age). The total authorized number may include two bulls. The season of use may vary depending on range readiness. There are three range improvements (two fences and one water development) on the allotment with permittee assigned maintenance responsibilities.

The 218 AUM stocking level falls within the primary range capacity of the Soda Unit (409 AUM) and is close to the capacity of the North Butte Unit (216 AUM). This stocking level is also within the combined 756 AUM capacity of the allotment since the units are used together along with private lands. Under the current system, Soda Creek/North Butte Allotment is moving toward site potential at most key areas.

Proposed Permit - The proposed permit would be modified from the current 2001 permit including the following: The permit would be a variable grazing permit where numbers, type of livestock, (cow/calf, yearlings, and dry cows) dates and times may be adjusted when authorized by a Forest Officer within a permitted limit.

The capable NFS primary range acres, when adjusted for other than suitable acres (see AMP page 10) Areas closed to Grazing) is estimated to be 1,555 acres under the proposed action. The total estimated capacity of Soda Creek/North Butte Allotment would be within the permitted use (540 AUM) and upper limit of the adjusted primary range and allotment.

2). Grazing System and Description of Management - The proposed grazing system and description of management (AMP pages 7) would follow an approximate rotation schedule (listed in table 5 of the AMP). The schedule would be adjusted via the Annual Operating Instructions as needed based on monitoring results from the previous year(s). Changes in the grazing system from the historic permit mainly address resource needs in Soda Creek Canyon, Soda Ridge Recommended Research Natural Area (rRNA), and Green Island Lake rRNA.

3). Integrated Design Features (IDFs) (AMP Section II, 3, a, pages 8-11) - The following IDFs would be included:

a. Allowable Use and Other Standards - Key area locations within the allotment are shown on Map 3. The proposed maximum annual authorized allowable standards would be: riparian (40%), streamside stubble height (40%), uplands (perennial grasses and upland shrubs (50%), riparian shrub annual growth (20%), and streambank disturbance and required stability (20%).

The standards are currently included in the historic permit, with the exception of riparian areas. For meadows, the proposed permit would be changed from 45% to 40% due to the 2004 ROD. (For meadows in late seral status: limit livestock utilization of grass and grass-like plants to a maximum of 40 percent (or minimum 4-inch stubble height). Streamside Stubble Height would be clarified from retaining 4-6 inches, to 4 inches, on streamside vegetative biomass at end of the grazing season. This standard may be modified depending upon stream condition and grazing system. The riparian shrub standard of 20% would be added.

b. Livestock Operation - The AMP (pages 9-11) would address 1) salt (or mineral supplement), 2) range readiness, 3) key area/allotment moves, 4) allotment exit, 5) areas closed to grazing, 6) riding and herding, 7) access and travel management, 8) fire restrictions, 9) disposal of dead livestock, 10) noxious weed prevention practices, 11) threatened endangered and sensitive (TES) and Special Interest plant species, 12) pesticides, 13) coordination for animal damage management, and 14) heritage resources. Some of this direction was provided in the historic permit, with the exception of: 5, 7, 10, 11, 12, 13, and 14.

Noxious weed prevention practices as embodied in the following IDFs (AMP page 11) would be incorporated into the proposed action: Known noxious weed infestations would be identified and mapped for the allotment. Identified noxious weed sites within or adjacent to the allotment containing isolated patches with small plant numbers would be evaluated and treated according to the species present and project constraints. Salt blocks and staging or gathering areas would be placed outside of known weed sites. Only certified weed-free hay, straw and/or mulch, and feed pellets, rolled grains, or certified weed-free cubes are authorized to be used on the Forest, as per current national policy. Under the same policy, seed mixes used for revegetation of disturbed sites would consist of locally adapted native plant materials to the extent practicable. If monitoring indicated a need for change in management strategies to eradicate noxious weeds, the plan (AMP) would be modified.

The proposed permit would also address Threatened, Endangered, and Sensitive (TES) plant species and Special Interest plant species (AMP page 11): Known occurrences of *Botrychium* spp., *Meesia triquetra*, *Meesia uliginosa*, and *Silene occidentalis* ssp. *longistipitata* would be monitored for impacts by livestock. Any new TES or Special Interest occurrences discovered after project implementation would be monitored for impacts from livestock. Sites having fens, TES plants or Special Interest species are to be managed as critical areas emphasizing livestock management which restrict cattle grazing or ground disturbance. If monitoring indicates impacts to known or new TES or Special

Interest occurrences from livestock activities, then adjustments, including potential fencing, would be made to alleviate the impacts. Salt blocks and staging or gathering areas would be placed outside of known TES and Special Interest occurrences.

III. Range Improvements (AMP Section III, pages 11, 12) **-** Maintenance of three rangeland improvements including two fences (LT Creek and Ben John fences) and one water development (Cold Springs) (Map 2) would be continued within the allotment the same as the historic permit. The AMP would include maintenance responsibility, maintenance standards, and additional criteria for compliance as well for planning new improvements. The AMP also lists proposed structures including temporary or permanent fence, small exclosures or protection (cages) to protect sensitive areas such as aspen, fens, or habitat for Botrychium or other species, including the Little Grizzly, Milkhouse, LT, and Willow Creek areas:

The following permanent structures are planned to be constructed by 2009-2010. The Forest Service will construct and the permittee will maintain: North Fork Willow Creek - One cedar rail exclosure (approx. 50 ft. x 50 ft.) to protect *Botrychium* habitat in T26N, R5E, Sec.15; Milkhouse Meadow - Two fences to protect *Botrychium* and willow habitat in T26N, R6E Sec. 19: one fence (approx. 50 ft. x 50 ft.) to protect *Botrychium* habitat at Milkhouse Spring north of road 26N31A, one larger fence to protect the willow component and *Botrychium* habitat in upper Milkhouse meadow; LT Creek - Four interior fences (approx. 50 ft. x 50 ft. each) to protect LT fens and realignment of the existing fence to manage cattle trailing away from sensitive wet areas within the meadow; Horseshoe Fen (Tributary to Soda Creek) - One fence (approx. 50 ft. x 50 ft.) to protect Horseshoe Fen.

IV. Adaptive Management (AMP Section IV, pages 11-15)

1). Implementation Monitoring - As described in the AMP pages 13, for key areas and other areas as needed, if implementation monitoring shows that allowable use or other standards are not being met, one or more of the following adaptive management options would be implemented:

Make adjustments in salt/mineral supplement locations, apply a herder to redistribute cattle on a regular basis, fence, either temporary or long term, (pending required clearances), develop upland water sources (pending required clearances), decrease season of use or time in pasture, make adjustments in stocking intensity; and if any TES aquatic species are found, and monitoring determines a need, fence springs or seep areas to exclude cattle (pending required clearances).

2). Long Term Condition and Trend Monitoring - As described on page 13 of the AMP, if long term monitoring on benchmark sites indicates that desired condition objectives are not being met or moved toward desired condition in a timely manner, one or more of the following options would be implemented:

At the key areas and other areas as needed, if existing mid seral meadows degrade to an early seral status, limit cattle utilization of grass and grass-like plants to 30% (or minimum 4-inch stubble height). If meadow cover degrades to greater than 10 percent area in bare soil and active erosion, require total rest from grazing until they have recovered and moved to mid or late seral status. If riparian shrub regeneration and recruitment needs are not being met, modify grazing plan.

Several monitoring plots (rooted frequency) have been established on meadows within the allotment including LAS0305 established at Little Grizzly key area (a), LAS0306 established at Milkhouse Flat key area (b), and LAS0307 established at Upper Yellow Creek key area (d). Vegetation and soil scores at Milkhouse and Yellow Creek were moderate in the first (2003) reading and low at Little Grizzly. These plots were re-read in 2008 and the readings moderate. These plots as well as other key areas will continue to be monitored to determine whether livestock

disturbance is hindering an upward trend. Management would be adjusted if monitoring determines livestock disturbance is preventing an upward trend.

3). Other Adaptive Management (AMP Section IV, pages 11-15) - The historic permit would be modified to include a monitoring plan with an adaptive management approach, if monitoring indicates a need for change for the following resources.

a. Aspen - Aspen stands on the Soda Creek/North Butte Allotment are in the process of being identified, and evaluated. If monitoring indicates browsing on young trees and suckers exceeds 20% on terminal stems, adaptive management actions would be taken as described in the AMP (page 14). Management would be altered or the stand would be fenced. Treatments may also be proposed to enhance meadows or other areas within the allotment. The locations and design would be determined after site specific surveys and project specific NEPA are completed.

b. Best Management Practices (BMPs) - The soil and water BMPs applicable to rangeland management including BMPs 8.1 (meet streambank standards), 8.2 (meet annual operating instructions) and 8.3 (place temporary or permanent fence in strategic locations) would be incorporated into the proposed permit (AMP page 14).

c. Hydrologic Function - a meadow habitat monitoring plan to ensure that characteristics are, at a minimum, in Proper Functioning Condition would be included. Meadows are functioning properly when adequate vegetation, landform, or large woody debris is present to dissipate stream energy associated with high water flows (AMP page 14).

d. Heritage Resources - A heritage resource monitoring strategy for heritage resource sites within the Soda Creek/North Butte Allotment would be included (AMP pages 14-15). Sites located within the allotment would be selected for monitoring to assess grazing effects by the District Heritage Resource Manager and implemented by an interdisciplinary team. An adaptive management strategy would be instituted using integrated design features to protect sites from on-going damage or potential damage identified by site monitoring. The sites generally range in size from less than an acre to several acres and the monitoring plan along with adaptive management procedures would be used to adjust grazing to ensure the protection of heritage resources during the life of the permit. The Grazing Heritage Management Strategy for Lassen National Forest would be made part of the AMP.

e. Special Aquatic Feature (fens) - Fens within the boundary of the Soda Creek/North Butte Allotment would be made part of a fen management strategy that includes a monitoring plan along with adaptive management procedures to adjust grazing if necessary (as described in the Sierra Nevada Forest Plant Amendment FEIS (2004). A fen strategy for the Soda Creek/North Butte Allotment is complete and would be made part of the AMP (page 15-16).

f. Anadromous Fish - According to the Long Term Strategy, the Grazing Management standards listed for grazing management would be applied as described. They include modification of grazing practices if needed to the strategy, proper location of livestock facilities away from riparian areas, and limited handling of livestock near riparian areas (AMP page 16).

g. Willow Flycatcher - The Management Strategy for Willow Flycatcher includes deferred use in the Grizzly Creek drainage (AMP 17 page 15).

V. Monitoring and Evaluation (AMP Section V, pages 17-19) - A description of short-term implementation monitoring, long-term effectiveness monitoring, as well as a proposed schedule for the benchmark areas listed in Table

15 of the AMP (page 18). Each site has a specified type of monitoring and visit interval. Methods that would be used are detailed in several regional technical reference guides.

Annual Operating Instructions (AOI) and permit compliance are described in the AMP pages 19-20. The AOIs would detail the current season's management schedule, maintenance responsibilities, rangeland improvement program, allowable use standards, key areas, and any adaptive management recommendations based on previous season(s) monitoring results. The AOI would become an amendment to the AMP and as such, a part of the Term Grazing Permit. Reviews and changes to the AMP may also be completed as described on page 20.

PURPOSE AND NEED OF DECISION

Background - The allotment is included in the Forest's rangeland resources determined to be suitable for commercial livestock grazing. As described in the Lassen National Forest Land and Resource Management Plan (LRMP), the Soda Creek/North Butte Allotment lays within #37 (Butt Creek) (30%), #44 (Jonesville) (45%), and #45 (Soda Ridge) (25%) Management Areas located on the Almanor Ranger District. The LRMP allotment strategy for the allotment is listed as Strategy C (Extensive Management), defined as distribution of livestock use over rangelands to meet rangeland management objectives using cost-effective structural improvements. Management has been adjusted over the years out of the need to exclude livestock from rRNAs as well as other concerns.

Current System and 2001 Permit - Data used to determine capable and suitable allotment acreage was first collected and mapped extensively in the 1960s. The total NFS capable acres included the primary (2,402 acres) rangelands. The maximum permitted number totals 40 to 54 head or 79-218 AUM (as described on page 3, 7).

Proposed Permit - This information has been verified over the years by annual rangeland utilization monitoring and other monitoring. Suitable rangeland would be further adjusted for various criteria and when adjusted for other than suitable acres the primary rangeland within the Soda Creek/North Butte Allotment-South is estimated to be 1,555 acres under the proposed action. The maximum permitted number would continue to be 54 head or 218 AUM. The allotment and 2001 permit is described on pages 1-2 of this document. Under the proposed action Soda Creek/North Butte Allotment is estimated to move toward site potential in all key use areas.

Table 1 - Allotment Acres and Maximum Permitted

Allotment	NFS Acres	NFS lands Classification	NFS Lands Adjusted Suitable under the Proposed Action	Watershed	Maximum permitted (AUM*)
Soda Cr./ North Butte	27,267 (94%)	2,402 ac. Primary 1,878 ac. Secondary	1,555 ac. Capable/ Suitable, approx. 540 AUM capacity	Butte, Yellow, Soda, Little Grizzly Cr. and Tributaries	109 on/109 off = 218 AUM

* Animal Unit Month (AUM) is the number of cow/calf pairs multiplied by the months of grazing (typically 3-4 months)

Purpose - The purpose of this proposed action is to continue authorization of livestock grazing on the Soda Creek/North Butte Allotment under modified current management, which has been demonstrated through monitoring to be leading toward Forest Plan desired conditions and to fulfill the goals and objectives described in the Forest Plan (as modified through amendments and agency directives). Authorization is needed on the allotment because:

- Where consistent with other multiple use goals and objectives there is Congressional intent to allow grazing on suitable lands. (Multiple Use Sustained Yield Act of 1960, Wilderness Act of 1964, Forest and Rangeland Renewable Resources Planning Act of 1974, Federal Land Policy and Management Act of 1976, National Forest Management Act of 1976).

- The allotment contains lands identified as suitable for domestic livestock grazing in the Lassen Forest Plan and continued domestic livestock grazing is consistent with the goals, objectives, standards, and guidelines of the forest plan (Forest Plan, p. 3-17).
- It is Forest Service policy to make forage available to qualified livestock operators from lands suitable for grazing consistent with land management plans (FSM 2203.1; 36 CFR 222.c).
- It is Forest Service policy to continue contributions to the economic and social well being of people by providing opportunities for economic diversity and by promoting stability for communities that depend on range resources for their livelihood (FSM 2202.1).

Under the terms of Section 504(a) of the 1995 Rescissions Act, Public Law 104-19 (7/27/1995), a schedule for completion of Allotment Management Plans, including National Environmental Policy Act (NEPA) analysis has been developed and followed. Development of the schedule was initiated by the Chief on October 4, 1995. The schedule was submitted to Congress on February 8, 1996 and published on March 7, 1996. The allotments are included on the Lassen National Forest NEPA Schedule (pp. Region 5-28) which is based on the 1996 schedule.

No site-specific NEPA analysis had been completed on the Soda Creek/North Butte Allotment which is within the Butte, Soda, Little Grizzly, and Yellow Creek watersheds. The Recessions Act schedule (pp. Region 5-28) listed a completion date of 1999.

Need - There is a need to maintain or move existing rangeland conditions within the allotment toward desired conditions as described in the LRMP and to develop Allotment Management Plans (AMPs), issue Term Grazing permits and Annual Operating Instructions in compliance with FSH 2209.13, Chapter 90. Management of the allotment, including long term direction, needs to be updated to be consistent with Forest Plan goals, objectives, standards and guidelines. Livestock management needs to be addressed in an Allotment Management Plan with Integrated Design Features that are consistent with the forest plan.

Site-specific analysis indicates that the allotment is capable of supporting viable commercial livestock grazing, but there is a need to implement an adaptive management system to move toward and maintain desired conditions. The proposed adaptive management system consists of defining forage utilization standards, monitoring resource conditions, and adapting management activities based on the results of monitoring. The proposed adaptive management system provides a list of possible management actions, such as adjusting livestock numbers or timing and duration of grazing, to respond to needs identified by monitoring. The existing and desired conditions are described below:

Authorization Criteria

- Desired Condition - The number of livestock is within the carrying capacity of the range resources in the allotment. Grazing occurs within suitable areas and Forest Plan forage utilization and other standards are not exceeded.

- Existing Condition - Rangeland resources within the Soda Creek/North Butte Allotment consist mainly of wet meadows and riparian stringers surrounded by a mixed conifer forest and moderately uneven terrain. The allotment was mapped for capable grazing acres in 1964 and 1967 and this data was used to determine capable and suitable allotment acreage described in the historic AMP (Range Management Plan 1966 and 1969). The capable acres as determined in that historic report consist of primary rangelands which are chiefly meadow areas with perennial grass and adequate water. There may be some transitory range temporarily made available by timber harvests or fires though not calculated into grazing capacity figures. The allotment was determined to be suitable for commercial livestock grazing under extensive (Strategy C) management during the planning and analysis for the Forest Plan in 1993. Approximately 2,402 NFS acres of primary range are the basis for determining baseline capable and suitable acres in this analysis.

Under the current (2001) authorization, as listed in the AMP (pages 4-8 Management Requirements), total use averages 54 cow/calf pairs each year for an average period of 92 days. The 2001 permit includes maintenance responsibility and standards for three range improvements. The AMP also describes the management system which involves the use of meadow pastures and private lands. Monitoring indicates that the authorized number of livestock is within the carrying capacity of the range resources in the allotment.

The historic permit did not preclude use of Soda Creek Canyon and other areas, although use of these areas has been discontinued in normal operations. The proposed grazing system and description of management (AMP pages 7, and 13-17) addresses the need to limit grazing in Soda Creek Canyon, Soda Ridge Recommended Research natural Area (rRNA), and Green Island Lake rRNA. The need for change from current management (historic permit) includes the following:

- Need for Action - The authorization needs to include standards and criteria for the authorized use, grazing system, and adaptive measures. If there are future needs for short-term changes the proposed variable grazing permit could allow for numbers, type of livestock, (cow/calf, yearlings, and dry cows) dates and times to be adjusted when authorized by a Forest Officer within the permitted limit.

  Additional direction is needed to address range improvement planning and other criteria. The AMP (Section III, pages 11-12 Range Improvements) contains standards and criteria regarding range improvements within the allotment. Other standards need to be incorporated or continued in the permit for various purposes. These are listed in the AMP (Section II, 3, b, pages 9-11) and address 1) salt (or mineral supplement), 2) range readiness, 3) key area/allotment moves, 4) allotment exit, 5) areas closed to grazing, 6) riding and herding, 7) access and travel management, 8) fire restrictions, 9) disposal of dead livestock, 10) noxious weed prevention practices, 11) Threatened, Endangered or Sensitive (TES) and Special Interest Plant Species, 12) pesticides, 13) coordination for animal damage management, and 14) heritage resource protection.

Rangeland Vegetative Conditions

- Desired Condition - Forest Plan forage utilization standards are not exceeded. Long-term monitoring shows that rangeland vegetative conditions in the allotment are meeting or trending toward desired conditions. The Allotment remains in compliance with permit terms and conditions and Forest Plan standards and guidelines.

- Existing Condition - Management of the allotment has been adapted to address riparian concerns by applying a grazing system keyed to moving livestock, with the use of herding and meadow pastures, reflective of Strategy C (Extensive Management) as described in the AMP (page 7).

  Long-term monitoring shows that rangeland vegetative conditions in the allotment are in moderate functional status, which is considered to be satisfactory condition. Short term monitoring has indicated the key areas have generally had acceptable levels of forage utilization although forage utilization standards were exceeded in 1999 and 2000 at two key areas. A summary of end of season monitoring is included in the specialist report (see expanded table for dates, photo record details). Most of the proposed maximum annual authorized allowable standards are included in the 2001 permit with the exception of riparian areas.

- Need for Action - The adaptive management strategy is needed to move the allotment towards desired condition. The AMP (Section II, 3, a, pages 8-11, Integrated Design Features) contains the authorized allowable riparian and streamside stubble height, upland perennial grass and shrub, riparian shrub, and streambank disturbance standards. The annual authorized allowable standards are needed to comply with the 2004 ROD. The AMP (Section IV, pages 13-17 Adaptive Management) contains measures for planning in case implementation monitoring shows that allowable use or other standards are not being met. The AMP also lists options for planning

in case long term monitoring on benchmark sites indicate that desired condition objectives are not being met or moved toward desired condition in a timely manner.

Aspen

- Desired Condition - Livestock grazing does not damage aspen stands.

- Existing Condition - Browsing by deer and livestock on young trees and suckers may be exceeding proper levels in some areas. This along with other stand conditions may be impacting aspen on the allotment.

- Need for Action - The adaptive management strategy is needed to move aspen stands toward desired condition. The historic permit needs to be updated to include the Sierra Nevada Forest Plan Amendment's woody riparian browse standard of 20% (ROD, pg. 66) to comply with the 2004 ROD. The AMP (page 8) contains the authorized allowable woody riparian browse standards. To ensure that proper allowable browsing standards by livestock are met, the AMP includes Key areas (Table 3, 8) selected for monitoring browse on aspen. If monitoring indicates livestock grazing exceeds 20% and changes in herd management cannot alleviate the problem, the stands would be fenced.

Soil, Water, Hydrologic Function (PFC), and Special aquatic features (fens) or meadow habitats

- Desired Condition - Stream conditions in the allotment continue to show improvement, soil and water BMPs are met, special aquatic features and other sensitive resources, including fens are at a minimum, in Proper Functioning Condition (PFC), as defined in the appropriate Technical Reports (or their successor publications): (1) "Process for Assessing PFC" TR 1737-9 (1993), PFC for Lotic Areas" USDI TR 1737-15 (1998) or (2) "PFC for Lentic Riparian-Wetland Areas" USDI TR 1737-11 (1994), (SNFPA #117 Associated with Riparian Conservation Objective # 5, p. 65). SNFPA #117 gives direction to assess the hydrologic function of meadow habitats and other special aquatic features during range management analysis.

- Existing Condition - Livestock are dispersed primarily in meadows surrounded by general forested areas, on mild slopes under a low-intensity stocking level. Key use montane meadows are generally small and scattered throughout the allotment. Surrounding forested areas are generally inaccessible to cattle due to steep slopes, rocks or debris and generally not used by livestock and portions of the allotment are not grazed or only incidentally grazed. Livestock are distributed to meadow areas via established roads and various trails within the allotment. Streambanks in grazed areas appear stable.

  Soda Creek Unit - Fenced meadow areas including the LT and Ben John are managed closely to control drift and there has been a notable favorable response of sedges willows and alders since the LT area was fenced. Use in Milkhouse, Little Grizzly, and other meadows generally coincides with water availability and forage conditions. Road crossing maintenance has contributed to improved conditions at some areas including Little Grizzly. From 1999 to 2001, an electric wire was placed in the lower Little Grizzly area (10 acres) to allow the stream area to improve.

  North Butte Unit - Some previous watershed projects as well as proposed projects completed in the Willow Creek drainage and other areas have contributed to improved conditions. Floodplains exist on some higher order streams within the lower elevations (outside the allotment boundary including private lands in Yellow Creek drainage/Humbug Valley).

There is potential for livestock to cause trampling damage to fens and wetter portions of meadows and livestock impacts have been noted in some areas. There are some established stream monitoring sites and some fens are located in the vicinity of designated monitoring areas as follows: Elephanthead Fen (H (h-3, h-4) Functional/Functional at Risk 7/27/2009; Horseshoe Fen (E (e-3, e-4) or J) Functional at Risk 7/27/2009, L-T fens E (e-1) Functional 7/27/2009 (also see Effects to Botanical Species Section).

Adaptive management options are not contained in the historic permit although various actions have been completed under the historic permit including herd movement, temporary fencing, and stream improvement projects.

- Need for Action - Though there are existing monitoring sites, additional riparian monitoring sites and applied methods are needed. The proposed IDFs, adaptive management strategy, and monitoring portions of the AMP would be applied to meadow habitats, streams, and other areas as a change to the current permit. Soil and water Best Management Practices (BMPs), streambank standards, and adaptive management options need to be part of the management strategy of the allotment. The AMP's monitoring plan and adaptive management options also need to address hydrologic function with strategies that include monitoring along with adaptive management procedures (AMP pages 114-17, Table 15).

Heritage Resources

- Desired Condition - 1) All historic properties within the allotment susceptible to grazing impacts are identified through appropriate inventory and/or relocated and monitored; 2) The located historic properties within the allotment are recorded to current standards and data are shared with regulatory agencies, affected Federally recognized Indian Tribes, research institutions, and the public according to applicable regulations and standards, pursuant to the National Historic Preservation Act (NHPA), the Archaeological Resources Protection Act (ARPA), the Native American Graves Protection and Repatriation Act (NAGPRA) and related legislation; 3) All historic properties within the allotment are monitored on a regular timetable in order to assess the overall effectiveness of program implementation in consultation with the State Historic Preservation Officer (SHPO), the Advisory Council on Historic Preservation (ACHP), Federally recognized Indian Tribes and other interested organizations; and 4) Historic properties meeting the threshold for adverse effects identified during inventory and monitoring are treated according to stipulations outlined in LNF Grazing-Heritage Strategy. This includes evaluation and data recovery as determined necessary by the Heritage Resource Specialist (O'Brien 2008).

- Existing Condition - Over the last thirty years, NFS lands within the allotment have been surveyed in order to locate and record Heritage sites. Livestock distribute to various areas within the allotment in the vicinity of sites. Other sites are not near livestock use areas. One site is protected by fencing.

- Need for Action - If condition monitoring determines any changes to heritage properties resulting from cattle use or other rangeland activities, impacts to heritage properties need to be mitigated through adaptive management or through site evaluation, treatment plans or data recovery pursuant to the Lassen National Forest Grazing-Heritage Strategy (O'Brien 2008). The AMP for the Project Area needs to stipulate adaptive management procedures to protect heritage sites (AMP page 14-15). The proposed adaptive management strategy of the AMP would include findings of heritage site monitoring and be applied to allotment management as a change from the historic permit, and the AMP outlines how heritage sites located within the allotment would be managed to meet Section 106 requirements to account for effects on historical properties and protect those properties.

Noxious Weeds

- Desired Condition - Known noxious weed infestations are identified and mapped for the allotment. Identified noxious weed sites within or adjacent to the allotment containing isolated patches with small plant numbers are

evaluated and treated according to the species present and project constraints. Known noxious weed sites are controlled and monitored for the effectiveness of treatments according to the species present.

- Existing Condition - Three weed species listed by the California Department of Food and Agriculture (CDFA) as noxious occur in or near the Soda Creek/North Butte project area. Canada thistle (*Cirsium arvense*) is a CDFA B-listed species with moderate priority for treatment. Bull thistle (*Cirsium vulgare*) and yellow starthistle (*Centaurea solstitialis*) are CDFA C-listed species with low priority for treatment. Some of these noxious weed sites within the project area are actively being treated and/or are most likely eradicated. See the Soda Creek/North Butte project Noxious Weed Risk Assessment for further information.

- Need for Action - There is a need to control known noxious weed sites within the allotment and monitor the effectiveness of treatments according to the species present. The proposed IDFs and monitoring portions of the AMP would include findings of the Noxious Weed Risk Assessment and would be applied to allotment management as a change from the historic permit. There is a need to incorporate standards including direction that any use of hay, mulches or earth fill, would be certified weed free (AMP page11).

Anadromous Fish

- Desired Condition - In accordance with the Long Term Strategy, Grazing Management standards would provide direction regarding livestock facilities and handling near riparian areas.

- Existing Condition - Anadromous fish habitat is limited to the Butte Creek watershed (North Butte Unit), and located approximately 20 miles downstream of the allotment boundary. Both Central Valley steelhead and spring-run Chinook salmon are isolated from the upper watershed and Forest System lands by natural barriers that block passage. In general, conditions within the North Butte Unit are considered as properly functioning. Areas of higher risk for effects to aquatic resources including downstream anadromous species, are isolated to the Willow Creek drainage area. Though as mentioned above, a number of restorative actions have been implemented to improve conditions and minimize risk of effects in this area.

- Need for Action - Grazing Management standards need to be included in the AMP to provide direction regarding livestock facilities and handling near riparian areas (AMP page16).

Willow Flycatcher

- Desired Condition - In accordance with the LRMP, a Willow Flycatcher management strategy is completed and followed on the allotment.

  Existing Condition - There are no known willow flycatcher detections or sites within Soda Creek/North Butte Allotment. There is one active site along adjacent Butt Creek, west of Ruffa Ranch (2 miles north of the allotment). There have been reports of willow flycatcher in Humbug Valley on privately owned (PG&E) lands (4 miles east of the allotment). The LT fenced pasture provides potential suitable habitat. The meadow area outside of private Little Grizzly pasture provides marginal foraging habitat. There are no other meadows within the area (allotment) on NFS lands that provide suitable habitat for this species. In the Little Grizzly Valley drainage, livestock use is generally deferred until later in the season. The LT Creek pasture is also deferred. Monitoring at Little Grizzly LAS0305 plot (a-3) has shown an upward trend in ecological status since 2003.

- Need for Action - To establish a management Strategy for Willow Flycatcher, the AMP includes the deferred use system in the Grizzly Creek drainage (AMP page 16), deferred/limited use of LT fenced area, and proposed range improvements to release willows within the Milkhouse meadow complex.

DECISION TO BE MADE

Given the purpose and need, the Almanor District Ranger will review the proposed action and the other alternatives in order to make the following decisions:

Action Alternatives - If a decision is made to continue to authorize livestock grazing, the responsible official will decide whether to continue current livestock management (subject to applicable statutes, policy, and land use), or implement adaptive management as proposed.

No Action - The responsible official will decide whether or not to continue to authorize commercial livestock grazing in the allotment. A Forest Plan Amendment would be needed to permanently eliminate an allotment.

These management activities were developed to implement and be consistent with the Forest's 1993 Land and Resource Management Plan (LRMP), as amended the Sierra Nevada Forest Plan Amendment (SNFPA) FEIS, FSEIS and Records of Decision (2001, 2004). The proposed action has been determined to be in conformance with this plan as required by regulation regulations (36 CFR 222.1 et. seq.).

PUBLIC INVOLVEMENT

The Soda Creek/North Butte Livestock Grazing Management proposal was placed on the Lassen National Forest Schedule of Proposed Actions list starting January 2008 and has appeared in each quarterly report since. The SOPA was mailed to a list of individuals and groups and also posted on the Forest website. One e-mail request for a draft EA was received from the Sierra Forest Legacy (Darca Morgan) on January 31, 2008.

A preliminary scoping letter was sent to a list of interested parties on March 10, 2009 including local governmental agencies, conservation groups, cattle grazing association, and private citizens. This letter asked for public comments on the proposal until April 1, 2009. In addition, a notice about the project appeared on March 18, 2009 in the Chester Progressive, part of the Feather Publishing family of newspapers serving Plumas and Lassen Counties. No responses were received.

The draft Environmental Assessment (EA) was made available to the public and other agencies for comment during a 30-day period that followed publication in the Chester Progressive on August 12, 2009. No responses were received. All public involvement records are included in the project record for this project.

Consultation To Date (State and Federal Agencies, Tribes, and Permittees)

National Marine Fisheries Service (NOAA) - Informal consultation of ongoing grazing management for nine grazing allotments, including the Soda Creek/North Butte Allotment, was previously completed on July 16, 1998 (Letter from NOAA National Marine Fisheries Service's Regional Administrator, W. Hogarth, to LNF Forest Supervisor, K. Connaughton). Re-initiation of consultation is is required if circumstances have changed (as outlined on page 3 of NMFS's 1998 concurrence letter). Management practices have been consistent since 1993 and are described in the AMP, page 12-13.

Tribes - Tribal governments and other officials of tribes with possible traditional ties to the area or those tribes that have indicated interests were contacted regarding the Soda Creek/North Butte Allotment. Greenville Rancheria, Mechoopda Tribe of Chico Rancheria, Susanville Indian Rancheria, Redding Rancheria, and the Pit River Tribe were advised of the project on March 10, 2009 and copies of the draft EA were made available during the comment period. All consultation activities are included in the project record.

Permittees - The permittee was involved in the development of the Soda Creek/North Butte AMP and the planning process for this project. Permittee involvement records are included in the project record.

Issues - After review of comments, no significant issues were defined for the Soda Creek/North Butte Project Area.

ALTERNATIVES

Alternative 1 - **Proposed Action -** The Proposed Action is described on Pages 1-6 of this document. Under the Proposed Action, grazing would continue to be authorized under an adaptive management strategy. This strategy and Integrated Design Features would be outlined in a revised Allotment Management Plan (AMP) which would be incorporated into the current 10-year Term Grazing Permit, Part 3, Terms and Conditions. The AMP includes allotment specific resource objectives, management requirements, rangeland improvement criteria, and monitoring and evaluation that would be applied, summarized in pages 1-5 of this document.

The permit would be a variable grazing permit where numbers, type of livestock, (cow/calf, yearlings, and dry cows) dates and times may be adjusted when authorized by a Forest Officer within a permitted limit. The capable NFS primary range acres, when adjusted for other than suitable acres (see AMP page 7, Areas Closed to Grazing) is estimated to be 1,555 acres under the proposed action. The permitted use (218 AUMs) would be within the estimated capacity of the adjusted primary range and allotment.

Alternative 2 - **No Action -** The No Action alternative is synonymous with "no grazing". Livestock grazing would be discontinued within Soda Creek/North Butte Allotment. The no action alternative for NEPA decisions of grazing authorizations has been defined as no grazing by the Forest Service (FSH 2209.13, Section 92.31). Under this alternative, term grazing permits would be cancelled. Cancellation of term permits would follow federal regulations described in 36 CFR222.4 and provide two years notice to the permittee to vacate the allotment. Structural improvements described under the proposed action would be discontinued if not needed. Structures related to grazing, such as water troughs and fences, would be removed if and when feasible. This alternative, if selected would include a Forest Plan amendment to close the allotment and remove it from the grazing program.

Alternative 3 - Current/Historic Management (2001 permit) - Under the Current/Historic Management Alternative, authorized livestock grazing would continue in the Soda Creek/North Butte Allotment as described in the 2001 term permit. Management direction that would be followed is contained in the 2001 permit, historic (1969 Soda Creek and 1966 North Butte) allotment management plan, annual operating instructions, a biological opinion, or combination thereof.

The Soda Creek/North Butte Allotment 2001 permit authorizes the grazing of 27 cow/calf pairs on National Forest System lands (NFS), and 27 (off), for a total of 54 for an average period of 6/16 to 9/15 or 3.06 months (92 days) period of use. Actual use must stay within 90 percent of permitted use unless non-use is authorized. The permitted season is from 6/16 to 9/15. The season is generally fixed though it can vary depending on range readiness. There are three range improvements (two fences and one water development) on the allotment with permittee assigned maintenance responsibilities. Total authorized use under the 2001 permit is approximately 218 animal units per month (AUM) each year.

The authorization decision would continue current numbers and season, kind and class of stock, and standards and guidelines, range improvements and monitoring plans on the allotment. Management under this alternative would be similar to the Proposed Action in many aspects with the exception that integrated design criteria would not be included in the permit.

Alternatives Considered But Eliminated From Further Study

There were no other alternatives considered, nor were any developed from issues raised by the public. The historic management alternative was not eliminated from further study since it would not fully accomplish Forest Plan objectives.

Comparison of Alternatives – Following on pages 14-16 is a matrix which shows the differences between alternatives relative to significant issues and associated tradeoffs in meeting the purpose and need.

ENVIRONMENTAL CONSEQUENCES

Environmental Effects of Other Resources

More detailed analysis will be contained in the following documents and incorporated by reference in the environmental assessment prior to approval of a decision notice:

- Rangeland Specialist Report
- Heritage Report
- Watershed Specialist Report
- Noxious Weed Risk Assessment:
- Biological Evaluation and Assessment for Federally Listed and Forest Service Sensitive Plant Species
- Botanical Report for Special Interest Plant Species
- Biological Report for Terrestrial Wildlife Species and Habitats
- Biological Report for Aquatic Species and Habitats
- Public Services (Recreation, Socio-economics)

Table 2. Comparison of Alternatives. Soda Creek/North Butte Allotment

Item to Compare	Alternative 1 Proposed Action	Alternative 2: No Action	Alternative 3 Historic Management
Effects to Rangeland Resources			
Capable and Suitable acres (approximate)	1,532 acres adjusted primary range considered capable and suitable	0 acres primary, 0 secondary, 0 suitable acres	2,402 acres primary, 1,878 secondary. Primary range considered capable and suitable
Condition and Trend	Design criteria, including foraging standards described in the grazing permit and revised AMP, likely to move toward desired long-term rangeland resource trend.	Possible short term improvement in health, vigor in previous foraging areas, vegetative cover, accumulation of dead vegetative material to a	2001 permit terms and conditions including foraging standards likely to continue current rangeland resource conditions (satisfactory)

Range Improvements Economic Effect	Existing improvements (3) would be maintained as described in the grazing permit and revised AMP. Several new exclosures proposed. No effect; however, future may occur if utilization standards are not met. Total AUMs would not change from those currently permitted.	greater degree Range Improvements evaluated for removal. Fences, water system would no longer be maintained. 100% reduction in authorized head-months. Loss of direct and indirect jobs, income to County from grazing fees and livestock property tax	Existing improvements (3) would be maintained as assigned in the Term Grazing Permit. No effect; however, future may occur if utilization standards are not met. Total AUMs would not change from those currently permitted.
Effects to Heritage Resources	Design criteria addressed in a revised AMP likely to minimize future livestock effects. Monitoring and adaptive management per the LNF Grazing-Heritage Strategy	No effect from livestock grazing	Continued implementation of the Programatic MOU and Interim Protocol w/SHPO.
Effects to Watersheds	No effect at the 7th field watershed scale. Design criteria addressed in a revised AMP likely to minimize effects	No effect from livestock grazing	No changes to current permit standards and guidelines
Effects to Botanical Species	No known federally listed Threatened or Endangered, plant species. Sensitive Species; May affect individuals but not lead to a trend toward federal listing for: *Botrychium* spp., *Meesia triquetra, M. uliginosa, Silene occidentalis* ssp. l*ongistipitata.* Special Interest Species: There may be incidental effects, but with no decline in species viability, for: *Botrychium simplex, Claytonia palustris, Eriophorum gracile, Penstemon heterodoxus* var. *shastensis* and *Stellaria obtusa.* No effects to *Polystichum lonchitis, Carex limosa, Drosera anglica, Potamogeton robbinsii* and *Sparganium nutans.*	No effect from livestock grazing.	Same as Alternative 1 except impacts will continue to those species that will not be protected by adaptive management strategies, or include Integrated Design Features with regard to TES, and Special Interest plants species as well as noxious weeds, including proposed range improvements. Overall more impacts to species under Alternative 3.
Effects to Terrestrial Wildlife Forest Service Sensitive Species (Note: there are no	Threatened, Endangered, and Proposed Species and Critical Habitat: Will not affect: Giant garter snake (FT), northern	No direct or indirect effect from livestock grazing.	Same as Alternative 1

known occurrences of or habitat for any federally-listed terrestrial wildlife species in the analysis area) (FT = Federally listed as Threatened FE = Federally listed as Endangered FP = Federally Proposed for listing FC= Federal candidate for listing FSS = Forest Service Sensitive)	spotted owl (FT), Pacific fisher (FC, FSS), Valley elderberry longhorn beetle (FT), western yellow-billed cuckoo (FC), project area is outside species range/or lacks suitable habitat. Sensitive Species (FSS): No effect on: bald eagle, California wolverine, northwestern pond turtle, Pacific fisher (FC, FSS), Swainson's hawk, Townsend's big-eared bat, western red bat, American marten. Will have no adverse effect on: California spotted owl. May affect individuals but is not likely to lead to a trend toward federal listing of: American marten, northern goshawk, pallid bat, Sierra Nevada red fox and willow flycatcher.		
Effects to Aquatic Species and Habitats	May affect, not likely to adversely affect: federally listed Central Valley (CV) steelhead, CV spring-run Chinook salmon and/or their designated critical habitat (DCH). May affect, individuals not likely to cause a trend in federal listing: Cascade frog. Design criteria addressed in a revised AMP likely to minimize future effects.	No effect from livestock grazing	Similar to Alternative 1
Effects to Management Indicator Species (MIS)	Minimal effects to some MIS species including Pacific tree frog, mountain quail, and benthic-macro-invertebrates on the project scale, no affect on the bioregional scale.	No effect from livestock grazing	Similar to Alternative 1
Management Emphasis Species	Minimal effects to some Management Emphasis species including black bear. Design criteria, including foraging standards, likely to ensure satisfactory long-term rangeland resource trend.	Improvement in health and vigor for most species; possible decline in some disturbance-adapted species.	Similar to Alternative 1
Riparian Hardwoods	Aspen, willow, cottonwoods - Short term, less than Alt 2, long term, same or better. Design criteria, including foraging standards, likely to ensure	Improvement in health and vigor for most species; possible decline in some disturbance-adapted species. Possible minor increase in	Some riparian shrub seedlings may be injured or removed by livestock browsing.

	satisfactory long-term rangeland resource trend.	meadow encroachment by woody vegetation.	
Public Services (Socio-economics, Recreation)	Public services similar to the current situation. Permittees' traditional uses maintained. Recreation experiences may notice somewhat confined atmosphere due to fences. Trail and road use conflicts may exist between recreationists and livestock. Hunting big game does not generally conflict with livestock use as trailing timing considers hunting season dates. Habitat would likely remain the same or increase in productivity and value.	No public effect from livestock grazing	Similar to Alternative 1. Public services would not change from those currently permitted. Permittees' traditional uses maintained.

a. Effects to Rangeland Resources

1. **Alternative 1 (Proposed Action)** - Capable lands would be adjusted for other than suitable where grazing is not feasible or consistent with other land management decisions for the site-specific area as described above. Of the capable acres, 1,555 acres would be classified as adjusted suitable range. Approximately 25,712 acres (94%) would be considered non-capable or non-suitable. This alternative would result in no reduction in the currently permitted number of livestock or length of grazing season. Failure to meet utilization or other standards could result in future reductions. This alternative would have no socio-economic effects.

   The fences and water system in the allotment would continue to be maintained by the grazing permittee as part of the permit terms and conditions, and revised AMP. A revised AMP would also contain objectives that are designed to meet defined conditions for soil and upland vegetation. Adaptive management practices would improve grazing efficiency and reduce adverse effects on soil and upland vegetation within the allotment, and satisfactory conditions would be expected to be sustained within the next 15 years.

2. **Alternative 2 (No Action/No Grazing)** - Capable and suitable lands would be discontinued and removed the LRMP prescription would need to be modified. This alternative would result in no authorized grazing in the allotment, and, therefore, would have the biggest economic effect to the permittees and the county. There would be a 100% reduction in the permitted number of head months (number of cow-calf pairs (54) multiplied by months (3.06) in the grazing season) in the Soda Creek/North Butte Allotment. This would likely result in loss of income for the permittees and loss of jobs in the county. This loss of jobs would occur in the agriculture and mining sector, which is already in decline. The fences and water system in the allotment would not be maintained by the grazing permittee and the three range improvements would be evaluated for removal.

   The overall effect of no livestock grazing on rangeland condition could be beneficial the first few years and potentially neutral to negative thereafter. Indirectly, previous foraging areas could experience increases in litter accumulation and decreases in bare ground. Matting and accumulation of dead plant material could result, and possibly insulate the ground; provide water-holding capacity and decrease surface soil movement and erosion. Grasses that evolved with the periodic removal of vegetative material through fire, insects, or ungulates, in the absence of grazing or other disturbance, may eventually decrease in vigor.

3. **Alternative 3 (Historic Management) -** Similar to Alternative 1, but does not fully meet the purpose and need for the project or applicable Forest Plan direction. The current permit addresses IDF #s: 1) salt (or mineral supplement), 2) range readiness, 3) key area/allotment moves, 4) allotment exit, 6) riding and herding, 8) fire restrictions, 9) disposal of dead livestock. The current permit does not address IDFs for adaptive management or IDF#s: 5) areas closed to grazing, 7) access and travel management, 10) noxious weed prevention practices, 11) Threatened, Endangered or Sensitive (TES) and Special Interest Plant Species, 12) pesticides, 13) coordination for animal damage management, and 14) heritage resource protection.

Effects to Heritage Resources

1. **Alternative 1 (Proposed Action)** - Alternative 1 would not allow effects to heritage resources. Historic properties eligible or potentially eligible would be protected from direct or indirect effects resulting from rangeland activities. Adaptive management measures specific to each property would minimize direct or indirect adverse effects to these sites and the loss of valuable archaeological data. Riparian areas and other existing vegetation in satisfactory condition would continue to obscure surface artifacts and protect subsurface materials from erosion. The AMP would outline the criteria and selected areas and properties that would be monitored.

2. **Alternative 2 (No Action/No Grazing)** - This alternative would not authorize grazing in the allotment which would result in a direct beneficial effect to heritage sites as rangeland activities would cease. Upon permit termination, removal of historic grazing improvements would follow the Section 106 process of NHPA or the RPA for 106 compliance

3. **Alternative 3 (Historic Management) -** With implementation of Alternative 3, the Lassen National Forest Grazing-Heritage Resource Management Strategy would not be included. Direct and indirect effects from rangeland activities would be greater than Alternative 1. The current permit does not address IDFs for adaptive management or IDF#: 14) heritage resource protection.

c. Effects to Watershed (Hydrological Resources - Soil and Water)

1. **Alternative 1 (Proposed Action)** - The project would be implemented with integrated design features including BMPs designed to avoid or reduce the potential negative effects of the proposed activities on soil resources and downstream water quality. Adaptive management would be applied at key areas and cattle-accessible stream channels, that may include adjustments in livestock timing, intensity, frequency, or duration in order to continue to meet standards and satisfactory conditions. Implementation of these strategies would continue throughout the remaining term of the permit. Short term and long term monitoring would include larger meadow sites and other riparian areas that have been identified as being of greater risk of negative effects resulting from the Proposed Action. Effects to soils are expected to be limited in the extent and duration and within acceptable limits. The risk of negatively affecting soil productivity is low for the proposed project activities.

   Soda Creek Unit - Based on a combination of field surveys encompassing this unit of the allotment, estimates of cumulative disturbance using equivalent roaded acres (ERA), soil quality guidelines for Soil Hydrologic Function are being met in the subwatersheds. Grizzly Creek was determined to be close to its watershed threshold primarily due to: relatively high road density, the Storrie Fire (including fire suppression), and fuels reduction (including timber salvage on private lands) in the Storrie Fire. Range activities were considered but not included in the ERA analysis given the limited intensity of grazing in the allotment. Managed grazing and fenced areas such as LT, Ben John and other meadows would allow these areas to continue to move towards meeting desired conditions in fifteen years.

North Butte Unit - Perennial stream reaches within primary range areas mainly include the Willow Creek and Scotts John area. Surveys indicate that the streams are functioning properly, with the exception of Willow Creek road crossing (FS26N27; T.26N., R.5E., Sec.22) and campground area which is at risk. In-stream improvement projects completed in this area in the past, and reconstruction of the crossing to be completed in the fall of 2009, are expected to allow for conditions to stabilize.

2. **Alternative 2 (No Action/No Grazing)** - Under the No Action Alternative, livestock grazing would not be authorized so direct and indirect effects from commercial livestock grazing would not occur. There would be no direct effects to soils from cattle grazing and trailing that currently occurs on an annual basis. There would be no direct impact from livestock on streambanks in those areas accessible to cattle.

   Some minimal effects to soils would occur as a result of recreational use and from natural causes. Hydrologic processes would continue to be shaped by natural events, including spring snow melt, storm events, and wildfires. Cumulative watershed effects would continue to remain on the same trend of recovery of past management and natural disturbances, and remain below threshold of concern. Trails and salt areas are expected to recover within 5 to 20 years.

3. **Alternative 3 (Historic Management) -** Similar to Alternative 1. In general, the effect of continuing current management would be to perpetuate the conditions described for the benchmark areas of the allotment. The current permit does not address IDFs for adaptive management including soil, water, and hydrologic function.

Effects to Botanical Species

1. **Alternative 1 (Proposed Action) -**

   Direct Effects - The Soda Creek/North Butte Allotment will have beneficial effects to some Sensitive plant occurrences, due to range improvements implemented as part of the proposed action. At one site for *Botrychium minganense* on North Fork Willow Creek, a 25-foot-by-25-foot (or larger) will be installed around the plants, to protect them from continued trampling by cattle. *Botrychium* plants at Milkhouse Flat are similarly to be protected by fencing. In addition, cattle traffic is generally light or nonexistent around Scotts John Creek, in the meadows around Little Grizzly Fen, and outside the Cirby Meadow inholding (where some cows stay all season) - to date, no grazing impacts to TES plants in these areas has been noted. Should monitoring reveal impacts in the future, project IDFs require that livestock activities be adjusted to alleviate the impacts, including potential fencing.

   Elsewhere in the Soda Creek/North Butte Allotment project area, direct effects to *Botrychium* plants may be more likely. The plants grow in places where soil is perennially moist and that are usually associated with surface water. Such wet places also attract cattle, depending on their accessibility and the availability of forage. *Botrychium* plants are somewhat protected by their size: they may be so small as to escape grazing. Though larger plants are liable to removal by grazing, there is little formal research on the effects of grazing on *Botrychium*. *Botrychium* clearly tolerate some degree of grazing, however it is unknown how much and how frequent. It may well be that the more serious risk to *Botrychium* plants is not herbivory but trampling or soil churning, which can damage not only the evident aboveground plants but reproductive materials - sexual gametophytes, asexual gemmae, and overwintering rhizomes - in the soil within the population. The importance of these underground parts to the *Botrychium* life cycle can make it difficult to know just how big any given population is, since some of them may not produce any aboveground plants, especially in dry years. Therefore, even if visible plants are trampled, there may be undamaged plant material remaining in the ground to help the population survive. As noted above, should livestock impacts be noted at any *Botrychium* sites in the future, project IDFs provide for measures to be taken to alleviate the impacts.

Of the 16 occurrences of *Meesia triquetra* known from the Soda Creek/North Butte Allotment project area and three occurrences of *Meesia uliginosa*, those at Horseshoe and LT Fens will be protected by fencing, due to range improvements required as part of the proposed action. Since these fens have had known impacts from cattle in the past, fencing will eliminate ongoing impacts and provide a beneficial effect to these occurrences and their associated fen habitats. At other *Meesia* sites in the project area where grazing is feasible, direct effects to the plants are possible. At least as much as with *Botrychium*, *Meesia* habitat is perennially wet and green - primarily fens and wet meadows - and likely to attract cattle. The *Meesia* plants are too small for grazing but are highly vulnerable to trampling, and much depends on how frequent and intensive the cattle traffic might be. There are five fens (Elephanthead, Horseshoe, LT, Slate, and Yellow) and three wet meadows (Grazed Willow, Newberry, and Sawmill Tom Complex) where conditions have at some point been described as fair or worse. It is at these sites that *Meesia* plants have been most vulnerable to direct effects from grazing.

Direct effects to plants of *Silene occidentalis* ssp*. longistipitata* are possible but would be no more than incidental. Plants near Scotts John Creek are all on the uphill side of the road paralleling the creek (Rd. 26N11) and are some distance from the bed of the creek. These plants have been monitored almost every year since their discovery in 1995, with no evidence that the presence of cattle has affected them. The plant that was reported near Butte Creek in 1993 would likely be in the same situation, but it has never been relocated despite recent efforts to do so.

Special Interest plant species

Direct effects to most occurrences of *Claytonia palustris* and *Stellaria obtusa* are possible with the implementation of the Proposed Action. Among the occurrences in question, perhaps the ones least likely to see direct effects from livestock activity are the two occurrences of *Claytonia palustris* (#7 and #10) and the *Stellaria obtusa* #70 along Willow Creek. These three occurrences are all in the area where Scotts John and Willow Creeks run into Butte Creek, downstream from Butte Creek House. The area is west of the typical grazing allotment rotation (see Section II:2 of the Allotment Management Plan), and little impacts from cattle has been noted in past occurrence reports from the area, except for some "mucking" in the seep at *Claytonia palustris* #7 in 1992. Streambanks in the area tend to be somewhat steep and rocky and probably discourage livestock travel. Much the same can be said for *Stellaria obtusa* #24 and #31 along Scotts John Creek, even though the terrain is gentler. Cattle pass through this drainage each year but reportedly prefer other watersheds that have more forage - little evidence of cattle usage has ever been noted in this area. In addition, there will be beneficial effects to the *Stellaria obtusa* occurrence (#39) at the North Fork of Willow Creek, since this occurrence will be fenced from livestock impacts as part of a range improvement proposed for the adjacent *Botrychium minganense* occurrence.

Direct effects to *Claytonia palustris*, whether by trampling, removal, or burial, are likely to be no more than incidental, and the species has 26 more occurrences scattered across the Almanor Ranger District, including several nearby to the west, around Jonesville, and to the south, toward Philbrook Reservoir. In addition, *Stellaria obtusa* is an inconspicuous, ground-hugging species unlikely to be grazed, but it is vulnerable to trampling and burial. On the positive side, where it occurs, it often spreads in more or less extensive colonies with dozens, hundreds, or even thousands of plants, sometimes mixed with the similar *Stellaria crispa*. With such a sprawling, ground-hugging habit, it is likely that plants at any individual occurrence can sustain impacts from the small numbers of cows that travel through the Soda Creek/North Butte project area. *Stellaria obtusa* is probably the most "common" rare plant on the Almanor Ranger District: with 73 occurrences on the Forest and 24 within the project area (three of which are protected from livestock activity), impacts at most sites are unlikely to be more than incidental and unlikely to affect the viability of the species across the District or its range.

There should be no more than incidental direct effect to *Eriophorum gracile* at Savanna Fen from the implementation of the Proposed Action. The *Eriophorum* plants are patchily distributed through the lower shelf,

mostly in the northwest corner of the fen portion. At the time of initial report in 2007, cattle activity was evident in the dry meadow and other areas of the system; however, cows seemed to be avoiding the wettest areas altogether, and no damage was noted to *Eriophorum* plants, which numbered well over 100. Even though cows could easily reach the *Eriophorum*, the plants were flourishing in 2007 and will likely experience no more than occasional incidental direct effects from grazing, trampling, or waste burial in the future.

The occurrence of *Penstemon heterodoxus* var. *shastensis* at Sawmill Tom Creek may be more vulnerable to direct grazing impacts, since it is growing just below Forest Road 26N31 in open, herb-dominated riparian habitat. This location is within the general rotation area described in Section II:2 of the Allotment Management Plan and is typically visited late in the annual rotation, by which time the plants would have completed their annual cycle of growth and reproduction. The rotation pattern is not fixed, however, and direct grazing impacts could possibly occur earlier in the season while the plants are still active; nonetheless, 60 plants were present at the time of the occurrence report, and no cattle impacts were noted.

The fortunes of *Botrychium simplex* within the Soda Creek/North Butte project area are difficult to predict, due to lack of information. The site was apparently within the fenced area below the junction of LT and Panhandle Creeks. The meadows here are a complicated mosaic of willow strands, brooks, moist lodgepole stands, wet meadows, and fens. Given the complicated habitat and the diminutive nature of *Botrychium* plants, it is hardly surprising that the plants have not been relocated. At LT, livestock activity is concentrated at the end of the grazing season, by which time *Botrychium* plants would likely have distributed reproductive spores for the year. This would help perpetuate the occurrence in the event that particular plants are buried by animal waste or any of the aboveground parts eaten (the plants are often very small). The more serious and likely direct effect would be trampling and, in wet habitat where a hoof could go deep into the soil, damage to the plants' overwintering parts underground. Several dozen plants were reported at the site, so, given the size of the area (17 acres) and the limited time that cattle are present (one to two weeks), direct effects may be no more than incidental. There will be beneficial effects to the occurrence at Milkhouse Flat, since it will be fenced from livestock as part of range improvements proposed as part of the Proposed Action.

Indirect Effects - The effects of livestock-induced changes in competition and community structure on *Botrychium* would likely be only minor, since the plants have means (overwintering rhizomes and belowground reproductive parts) to wait out temporary changes in surface structure - indeed, the belowground parts of moonworts may not send up shoots at all in unfavorable years. More serious indirect effects could arise if livestock traffic were heavy enough to change the movement of water and/or the drainage of soil where *Botrychium* grows.

Intensive and/or frequent livestock traffic can also have serious consequences for the fens and similar wet meadows favored by the two species of *Meesia*. Both species are closely associated with rich fens, with deep accumulations of waterlogged peat soil, pH higher than about 5.5, and an abundance of mineral ions - indeed, water levels and nutrient characteristics are critical to the abundance and distribution of species in these systems. Hoof traffic, especially when concentrated in a particular spot or lane, can change the water movement and storage characteristics of a fen and, if severe enough, can ultimately dewater the fen. As water storage capacity decreases, the fen plant community, typically dominated by mosses and rhizomatous graminoids, may be invaded by short-lived, taprooted plants that don't contribute to long-term peat formation, such as *Hypericum anagalloides* and *Mimulus primuloides*. Such removal of ground cover results in a reduction of overall plant leaf area and therefore of primary production, and the exposed peat dries and decomposes, making the fen a place where overall system respiration increases and more carbon is lost than is accumulated. Should such major changes come about in a fen or wet meadow where *Meesia* occurs, the long-term persistence of the *Meesia* may be seriously jeopardized.

In July 2009, Horseshoe, Elephanthead, and L-T Fens were assessed for Proper Functioning Condition (PFC) as called for in the Adaptive Management Strategy section of the AMP (pages 15-16). These three fens were judged to be the ones in most immediate need of attention. Horseshoe and LT Fens are to be fenced to eliminate impacts, and Elephanthead Fen, with equivocal functioning condition, is to be monitored annually to see if it too needs fencing.

As noted above, 14 years of monitoring along Scotts John Creek have shown no evidence of livestock impacts to *Silene occidentalis* ssp. *longistipitata*. The area is only lightly grazed, and no indirect effects are anticipated.

Special Interest plant species

Indirect effects primarily relate to changes in a species' habitat, such as changes in local hydrology or vegetation structure, as well as increased risk of noxious weed invasion. There should be only limited indirect effects to Special Interest Plant species from the implementation of the Proposed Action. As noted above, the sites for *Claytonia palustris* and *Stellaria obtusa* along Scotts John and Willow Creeks and along Butte Creek below Butte Creek House have shown at most limited cattle usage in years past. Among the other occurrences of *Stellaria obtusa*, livestock damage has been noted at five sites. At four of these, plants were seen at least partly under alders or willows. Even when there is livestock activity at these four sites, it is unlikely to be heavy enough to remove the alders and willows under which *Stellaria* prospers, and thereby, to change the microclimate of its habitat. On the whole, it seems unlikely that indirect effects will ever be substantial enough to imperil *Claytonia palustris* or *Stellaria obtusa* in the Soda Creek/North Butte project area or across their range, due to their frequency within the project area, the low cattle usage of some sites where the plants occur, and to natural protection from association with alders and willows at some sites.

Protracted, concentrated livestock activity is capable of disrupting fen hydrology and vegetation structure permanently. As noted above, however, such impacts have not been observed at Savanna Fen, where *Eriophorum gracile* occurs. Therefore, no indirect effects to the *Eriophorum* are expected from livestock activity under the Soda Creek/North Butte project. Should future monitoring show impacts from livestock activity, the Adaptive Management Strategy for Fens and Other Special Aquatic Features calls for measures to be taken to eliminate the impacts.

Habitat for *Penstemon heterodoxus* var. *shastensis* at Sawmill Tom Creek is already open, and it is relatively dry for a riparian strip. Here too, livestock activity will not alter the existing habitat in such a way as to indirectly affect the species.

Even though direct effects to *Botrychium simplex* are possible at the meadows along LT Creek, alteration of environmental context due to livestock activity is unlikely. Though moderate to heavy grazing and trampling were reported in 2001 and 2004, the wetland system is large, diverse, and resilient - during a tour of the wetlands in July of 2009, the system looked very healthy and vigorous. As a result, long-term changes to hydrology and vegetation structure due to livestock activity are unlikely. Project IDFs provide for ongoing monitoring and, as necessary, consequent adjustments to livestock activities to protect the occurrence if future impacts are determined to be detrimental to the viability of this species at LT Creek.

An increase in noxious weeds or other undesirable non-native species is a potential indirect effect of grazing activities; however, the likelihood of such effects in the Soda Creek/North Butte Allotment project area is low (Noxious Weed Risk Assessment, Soda Creek/North Butte Allotment project). Grazing management can affect weedy species' spread by carrying seeds into new areas and by altering soil cover conditions in ways favorable to weed establishment. This has been the case in the project area for an extended period of time, and yet the area is largely free of weeds, due in part to the heavy forest and chaparral cover over most of the landscape. Canada

thistle, bull thistle, and yellow starthistle are the only CDFA-listed noxious weeds reported to be present in or near the allotment, at five sites. At two of the sites, weeds are believed to have been eradicated; the other three sites have not been treated. Project noxious weed Integrated Design Features, such as continued treatments of known occurrences and use of weed-free hay, substantially reduce the risk of noxious weed spread, so impacts from noxious weed invasion are not expected.

2. **Alternative 2 (No Action/No Grazing) -** There would be no direct effects to species of *Botrychium* or *Meesia* or to *Silene occidentalis* ssp. *longistipitata* from the No Action Alternative other than those associated with current ongoing activities. In addition to the removal of the possibility of trampling and grazing on plants by cattle, indirect effects from Alternative 2 are associated with the potential of negative vegetative succession in the absence of grazing within known Sensitive plant habitats, and with the beneficial effect of habitat recovery in those fens that have been damaged by past livestock use. At a minimum, it seems reasonable to expect that removing the possibility of trampling and soil churning by cattle would be a benefit for the *Botrychium* plants. *Meesia* plants would also benefit by the removal of grazing from any fens or wet meadows, since hoof punching and the annual exposure of peat caused by livestock grazing can have a long-term negative effect on these species and their associated habitat. *Silene occidentalis* ssp. *longistipitata* individuals might suffer to some degree if there were a resurgence of vegetative competition following removal of grazing, but since grazing has not been observed within these occurrences, this is likely not an issue.

   As a result, the No Grazing Alternative would only provide beneficial effect to Sensitive plants species and their habitats within the Soda Creek/North Battle Allotments project area. Given that no negative direct or indirect effects are expected to species of *Botrychium* and *Meesia* or to *Silene occidentalis* ssp. *longistipitata* from the implementation of the No Action Alternative, cumulative effects are not a concern for these species with the implementation of Alternative 2.

   <u>Special Interest plant species</u>
   There would be no direct or indirect effects to *Botrychium simplex*, *Claytonia palustris, Eriophorum gracile, Penstemon heterodoxus* var. *shastensis* or *Stellaria obtusa* from Alternative 2 because no action would occur other than ongoing non-grazing activities. Besides the removal of the possibility of trampling or other impacts by cattle, there would be additional beneficial effects from Alternative 2 associated with habitat recovery in those wet meadows, fens, and riparian areas that have seen impacts from livestock usage, particularly those where *Botrychium simplex, Claytonia palustris, Eriophorum gracile, Penstemon heterodoxus* var. *shastensis*, and *Stellaria obtusa* occur.

3. **Alternative 3 (Historic Management)** - The major difference between this Alternative and the Proposed Action is that IDFs would not be included in the permit and there would be no new fencing at Horseshoe Fen, LT Fen, Milkhouse Flat, or the North Fork of Willow Creek that will provide beneficial effects to Sensitive plants and their associated habitats.

   Direct and indirect effects to species of *Botrychium* and *Meesia* and to *Silene occidentalis* ssp. *longistipitata* would be similar to those described for Alternative 1 within the Soda Creek/North Butte project area. Without IDFs, however, means would not be available to protect plants of these species from livestock impacts, should such impacts be observed during future monitoring or discoveries of new populations. Furthermore, without new fencing at Horseshoe Fen, LT Fen, Milkhouse Flat, and North Fork Willow Creek, there would be continued impacts to occurrences of *Botrychium* and *Meesia* spp. located within these areas, and a few occurrences, notably the *Botrychium* occurrences at Milkhouse Flat, could be extirpated.

For Alternative 3, the cumulative effects of past, ongoing, and foreseeable future actions would be identical to those discussed for Alternative 1 (page 36), except that, in the absence of fencing as provided for by the project's Integrated Design Features, there would likely be continued effects to plants at occurrences where livestock impacts have been a substantial concern. Overall, trampling is the most likely negative effect that could change the survival prospects of species of *Botrychium* and *Meesia* in the Soda Creek/North Butte project area. Browsing and trampling of *Silene occidentalis* ssp. *longistipitata* are theoretically possible along Scotts John Creek, but cattle usage is typically light in this area and no such problems have been observed over the long period that the plants have been monitored. With continued historic livestock management under Alternative 3 it is possible that the viability of some *Botrychium* occurrences within the project could be in jeopardy; however, the viability of all the species would be maintained on the forest and throughout their range.

Special Interest plant species

Direct and indirect effects for individuals of *Botrychium simplex, Claytonia palustris, Eriophorum gracile* (at Savanna Fen only), *Penstemon heterodoxus* var. *shastensis* (at Sawmill Tom Creek only), and *Stellaria obtusa* are possible in the Soda Creek/North Butte project area and would be similar to those described for Alternative 1. Without IDFs, however, means would not be available to protect plants of these species from the negative effects of livestock usage, should such effects be found during future monitoring or should new populations be discovered. Furthermore, without new fencing at Horseshoe Fen, LT Fen, Milkhouse Flat, and North Fork Willow Creek, rare plants there would be vulnerable to more of the same kinds of impacts that have already been observed. The is especially true for the occurrence of *Botrychium simplex* at Milkhouse Flat, which like that at LT Creek, is uncertain; however, unlike LT Creek, which currently has a perimeter fence, under Alternative 3 Milkhouse Flat would not be fenced. Under Alternative 3, any plants persisting at Milkhouse would be vulnerable to further impacts, including potential extirpation, from continued livestock activity within this meadow.

For Alternative 3, the cumulative effects of past, ongoing, and foreseeable future actions would be identical to those discussed for Alternative 1 (see page 36). However, there will be more direct and indirect affects to *Botrychium simplex, Claytonia palustris* and *Stellaria obtusa* that would add cumulatively to any ongoing and future action with the implementation of Alternative 3. Continued trampling and browsing are both possible for *Claytonia palustris, Eriophorum gracile*, *Penstemon heterodoxus* var. *shastensis,* and *Stellaria obtusa* occurrences within the project area, but over the period that these plants have been monitored, observed livestock impacts have mostly been minor to none. Considerable habitat impacts have been reported at a few of the *Stellaria obtusa* occurrences, but the species is sufficiently frequent on the Lassen National Forest that its viability is likely secure. Some degree of effect from continued livestock grazing is possible for all five species but unlikely to affect the viability of these species within the Soda Creek/North Butte project area or across their range. The exception might be *Botrychium simplex*: its viability across its range would likely be unaffected by the project, but its status within the project area is uncertain with the implementation of Alternative 3.

Effects to Terrestrial Wildlife Species and Habitats

Alternative 1 (Proposed Action) -

Direct and Indirect Effects -

American Marten - Primary direct and indirect effects to this species would be related to potential grazing-induced changes to prey populations through reductions of vegetative cover. Small clearings, meadows and riparian areas provide foraging habitats for marten, particularly during the snow-free seasons (Zeiner et. al 1990). Of the prey species listed above, herbaceous layers or grasses were not listed as important for Douglas squirrel. Of the

remaining, either grasses or herbaceous layers were considered essential for voles and deer mice and secondarily essential or preferred for the others. Voles may be most affected by loss of herbaceous cover.

As noted by Harville (2008) in the BE/BA for North Battle Creek Allotment, an allotment with similar habitat features, livestock grazing or other activities that reduce herbaceous cover can have an impact on small mammal populations (Keesing 1998 Medin and Clary 1989; Eadie 1952, Hunter 1991, Mossman 1955, Birney et al 1976). Tall, dense cover may be beneficial to small mammals by providing moderation of humidity or moisture, reducing penetration of light, or through indirect effects on temperature, plant growth, and soil moisture or texture. Heavy cover prevents dense packing of snow, making subnivean (under snow) space more hospitable. Grazing reduces this cover as well as the nutritional value of the vegetative and reproductive portions of graminoids and forbs. Greene (1995) found that voles chose areas which were moist, and that had high plant cover and vegetative height, and found that grazing lowered all three habitat variables and consequently reduced vole abundance. Greene (ibid) also found that in grazed situations, meadows occupied by great gray owls had greater vegetation height than unoccupied sites, and this was related to reduced vole abundance in areas with reduced vegetation height. Kie and Loft (1990), suggest that montane voles and western harvest mice would be adversely affected if herbaceous cover is reduced below 12".

As Harville (ibid) discusses, affects to small mammals due to reduction in vegetative cover seems well documented, as indicated by the above authors. However, it is difficult to directly extrapolate results of research to these allotments, primarily due to how cover has been measured. For example, Birney et al (1976), suggest 400-550 grams of vegetation per square meter may be considered a threshold level above which cover is sufficient to allow voles to increase in number sufficiently to undergo population cycling. Grant et al (1982) assessed effects of grazing on small mammals using kg/hectare of above ground biomass as a variable. Kauffman and Krueger (1984) cited another study which assessed small mammal composition and densities before and after grazing, and gave the number of hectares per AUM as a measure of grazing intensity. Comparative data for above ground biomass or hectares per AUM do not exist for the allotments under analysis, as these data either are not collected (weight of above ground biomass) or not available (hectares per AUM).

It is assumed here that grazing utilization on the allotments would thus be expected to reduce vegetative cover compared to the ungrazed condition, and this loss of vegetative cover would likely degrade habitat for some small mammals such as voles. However, the allotment, with a gross acreage of 28,417 acres, is stocked at a low intensity of 130 acres per AUM. Predominate portions of the allotment are either not grazed, such as most of the North Butte unit, or only incidentally grazed. Moderate to heavy cattle use was observed in a few key areas on the east side around Panhandle, LT and Little Grizzly Creeks and Milkhouse Meadow. The foraging conditions and meadow hiding cover (willow communities) in these locations could likely improve if the Integrated Design Features are fully implemented.

Direct or indirect effects to denning habitat would likely be unaffected by continued grazing. Potential for reduction in the quality of prey habitat would be very marginal and limited in scope across the allotment.

California Spotted Owl - Direct and indirect effects of the proposed actions to this species would be related to potential grazing-induced changes to prey populations through reductions of vegetative cover. However, utilization of herbaceous plants within this allotment has been within acceptable limits for maintaining prey populations. Also, most of the allotment is forested (93%), and thus livestock grazing only affects a very small percentage of owl forging habitat acreage. It is assumed that although reductions in vegetative height and cover could reduce habitat quality for some small mammal and bird prey species, actual effects to these species is likely very low. In addition, the primary prey species of spotted owl in these coniferous forests is flying squirrel, which feed heavily on hypogeous fungi. These fungi would not be affected by livestock grazing.

Northern Goshawk - As with spotted owl, direct and indirect effects of the proposed actions to this species would be related to potential grazing-induced changes to prey populations through reductions of vegetative cover.

However, utilization of herbaceous plants within this allotment has been within acceptable limits for maintaining prey populations. As discussed by Williams (ibid), the foraging strategy of the goshawk is to take prey in openings from a perch near the edge of the opening. Since openings, or edges, support a wide range of wildlife this would be a natural foraging area. The size of an opening that a goshawk might use was not found in the literature but based on preferred habitat, an opening greater than 1 hectare (2.5 acres) might be fully utilized. The data gathered from nest sites on the Almanor Ranger District show that the vast majority of nests are within stands classified as CWHR 3D, 4D, and 5D. Less than 15% of the nests occur within CWHR 3D but such stands can provide suitable nesting habitat especially if there are inclusions of larger trees within the stand. Approximately 20% of the Creeks project area is comprised of stands that would meet the canopy closure criteria (greater than 60% canopy cover) for goshawk nest sites.

Direct or indirect effects to nesting habitat would likely be unaffected by continued grazing. Potential for reduction in the quality of prey habitat would be very marginal and limited in scope across the allotment.

Pallid Bat - Pallid bats feed mostly by gleaning large terrestrial arthropods (e.g. scorpions, crickets, grasshoppers and beetles) from the ground. Livestock grazing could impact bats if grazing resulted in altered plant species composition and abundance, degradation of riparian habitats, or changes in abundance of prey items (Chung-MacCoubrey 1996).

Potential roost sites appear to be relatively abundant within the Soda Creek/North Butte Allotment and would be unaffected by continued activities associated with livestock grazing. Grazing activities may enhance prey abundance and foraging structure for pallid bats within the allotment. However, foraging habitat overall appears to be very low in quality and very limited in quantity.

Sierra Nevada Red Fox - The effects upon the Sierra Nevada red fox are similar to those described above for the marten, but they are thought to be much more dependent on the meadow component of the habitat for providing prey for the species (Perrine 2005). LRMP Standards and Guidelines for snag densities and canopy closure surrounding meadows should maintain important habitat components for this species. Due to the project's objectives of enhancing the meadow areas, the project is expected to have beneficial effects or no effect upon Sierra Nevada red fox.

It is assumed here that grazing utilization on the allotment would thus be expected to reduce vegetative cover compared to the ungrazed condition, and this loss of vegetative cover would likely degrade habitat for some small mammals such as voles. However, the allotment, with a gross acreage of 28,417 acres, is stocked at a low intensity of 130 acres per AUM. Predominate portions of the allotment are either not grazed, such as most of the North Butte unit, or only incidentally grazed. Moderate to heavy cattle use was observed in a few key areas on the east side around Panhandle, LT and Little Grizzly Creeks and Milkhouse Meadow. The foraging conditions and meadow hiding cover (willow communities) in these locations could likely improve if the Integrated Design Features are fully implemented.

Sierra Nevada red fox are likely absent from this allotment. If red fox were present, direct or indirect effects to denning habitat would likely be unaffected by continued grazing. Potential for reduction in the quality of prey habitat would be marginal and limited in scope across the allotment. Future integrated design features of this project and aspen/riparian restoration efforts of other foreseeable projects may favor increased prey abundance of snowshoe hare and other lagomorphs.

Willow Flycatcher (WFL) - The LT Creek gathering pasture is currently managed as end of season gathering by the permittee. The pasture is grazed for less than two weeks, by up to 54 cow/calf pair for the first two weeks of September prior to moving off of NFS lands. This deferred short-duration management within the gathering pasture, which has been in place since 2001 has resulted in a notable favorable response of sedges willows and alders. Williams recalls that there were very few willows at this site prior to construction of the gathering pasture

(Williams pers. comm.). If WIFL were to nest at this location, the deferred use would be consistent with current management direction and conservation strategy for occupied sites (USFS 2004).

Milkhouse Meadow is a fairly large meadow complex (24 acres) which has improved and is stable since 2001 (AMP, Table 2). However, the meadow complex is unsuitable as WIFL reproductive habitat and very low value foraging habitat. Due to the lack of shrubs and standing water within the meadow complex, it likely does not contribute to any significant habitat for birds in nearby occupied habitats (Butte Creek and West Humbug Valley), floaters or those migrating through the area. There are numerous willows (several dozen were detected during the 7/30/09 site visit) that have established in this meadow since 2001 when grazing was monitored and administered to standards. These recruited willows are in an arrested state (hedged) from a likely combination of deer and cattle browsing. However, the distribution of these young willows provides insight into the site's potential for supporting a released willow community within the meadow complex. Continued cattle grazing, at the current use levels, precludes managing this site towards suitable WIFL moderate value foraging habitat and is not consistent with the conservation strategy given in the SNFPA (USFS 2004).

Deferred use of NFS lands along Little Grizzly Creek provides additional protection to WIFL forging areas early in the season; this site has shown an upward trend in ecological status since 2001 (AMP, Table 2).

In summary, no changes in populations and no significant benefits for any of the species would be anticipated. A revised allotment management plan would contain objectives and adaptive actions that are designed to meet defined conditions for the species and habitats.

2. **Alternative 2 (No Action/No Grazing)** - Under the No Action Alternative, no commercial livestock grazing would effect wildlife in the allotment. Past or present effects would diminish after 2-year removal of cattle for approximately 15 years.

3. **Alternative 3 (Historic Management) -** Similar to Alternative 1.

Effects to Aquatic Species and Habitats

1. **Alternative 1 (Proposed Action) -** Based on the analysis of the Fisheries BA (USFS 1998), and Summary of Findings Report (USFS 2009) and Biological Evaluation for Forest Sensitive Amphibians 9USFS, 2009), there would be no direct affects, and no detectable downstream indirect effects to listed anadromous fishes including Central Valley steelhead and spring-run Chinook salmon, and minimal indirect effects to sensitive amphibian species including Cascades frogs. Furthermore, there would be no affect to rainbow trout populations in the project, including their habitat, abundance, or connectivity.

2. **Alternative 2 (No Action/No Grazing)** - Under the No Action Alternative, no commercial livestock grazing would effect aquatics in the allotment. Past or present effects would diminish after 2-year removal of cattle for approximately 15 years.

3. **Alternative 3 (Historic Management) -** Similar to Alternative 1.

g. Effects to Management Indicator Species (MIS)

1. **Alternative 1 (Proposed Action)** - Based on the MIS analysis, MIS would not be at risk as a result of activities planned under the proposed action (Alternative 1). No effects or minimal effects are expected to Pacific tree frog, mountain quail, and benthic macro-invertebrates from allotment activities. IDFs would minimize effects. Minimal effects to some management emphasis species including black bear are expected.

2. **Alternative 2 (No Action/No Grazing)** - Under the No Action Alternative, no grazing would occur in the allotment. No changes in populations of MIS species and no significant benefits for any of the species would be anticipated. Past or present effects would diminish after 2-year removal of cattle for approximately 15 years.

3. **Alternative 3 (Historic Management) -** Similar to Alternative 1.

h. Effects to Riparian Hardwoods

1. **Alternative 1 (Proposed Action)** - The project would be implemented with integrated design features including standards designed to avoid or reduce the potential negative effects of livestock browsing the current year's growth of riparian shrubs including cottonwoods, willow, and aspen. Monitoring would be conducted at key areas and livestock would be removed from NFS by the end of the season (September 15) when there is more potential for grazing on shrub or riparian hardwood species.

   Minimal effects to some riparian shrubs including willow, cottonwood, alder, and aspen could occur in meadows riparian shrub habitat but a revised allotment management plan would contain objectives and actions that are designed to meet defined conditions for the key areas with riparian hardwoods. Adaptive management practices would reduce adverse effects on riparian hardwoods within the allotment.

2. **Alternative 2 (No Action/No Grazing) -** Under the No Action Alternative (no commercial livestock grazing), there would be no grazing of riparian shrubs by cattle. Improvement in health and vigor for most species; possible minor increase in meadow encroachment by woody vegetation after two years after removing cattle up to approximately 15 years.

3. **Alternative 3 (Historic Management) -** Similar to Alternative 1. Utilization standards are in place for riparian shrubs but key areas, monitoring, IDFs and adaptive actions would not be further outlined in a revised AMP.

i. Effects to Public Services (Recreation, Socio-economics)

1. **Alternative 1 (Proposed Action)** - Alternative 1 contains adaptive management measures so the potential benefits of this action alternative are greater than the current situation by proactively addressing resource concerns. This alternative would have a greater benefit and value to a larger number of interest groups. The effects of implementing the Integrated Design Features of Alternative 1 and impact to the ranching operation and AUM level is unknown although the operator has been effective in monitoring and using forage from Forest Service lands. As with Alternative 3, outside forces play a large role in the ability for ranchers to maintain an operation's profitability.

   The ranching operation may benefit from the adaptive management practices as a result of increased land performance and vegetation health. Enhanced ecosystem conditions may mean increased nutritive value of forage which could result in higher weigh gains on livestock, especially calves, which would likely increase rancher profit margins depending on market activity. The operator may not be able to adapt to new management practices and profit margins could become too small to remain in business. The operation could possibly fail.

   Socially, it is likely that this alternative would have greater benefit and value to a larger number of interest groups than the no action alternative. People who are interested in protecting and improving resources including wildlife and fish habitat, and increasing hunting and fishing opportunities would see their values reflected in the adaptive management activities associated with this alternative.

Recreationists traveling roads in the Soda Creek/North Butte Project Area could potentially encounter livestock as they are being trailed along roads and routes or near key areas or fenced pastures. They may notice livestock sign (grazing, tracks, etc.) near Cold Springs or other trailheads. By maintaining fencing, gates, and water systems, and adjusting the timing and placement of cattle there may be fewer conflicts with recreation users. Hunting and fishing opportunities along the many creeks are not expected to change since livestock do not access most of Butte and Soda Creek canyon areas. Most camping and picnicking occurs is dispersed throughout the area including various campgrounds and trailheads including the Pacific Crest National Scenic Trail and the Butte Creek House Trail which are located in the vicinity. End of season livestock removal and trailing operations on NFS lands are timed to lessen conflicts with hunting season timing.

Some recreation users may have a sense of place with the historic role of grazing clearly visible. The historical and continuing role of project-area lands and associated private inholdings under this alternative would continue certain cultural values.

2. **Alternative 2 (No Action/No Grazing) -** The elimination of all grazing within the allotment would result in the loss of a portion of the permittees' primary or sole income source with the possibility of some additional part-time or seasonal jobs also being eliminated**.** This could cause the dependent ranching operation to go out of business or drastically lower their current levels of operation. This alternative does not support local communities trying to maintain a lifestyle based on ranching. Hence, there would be significant social effects, even though economic effects may be minimal because of the small number of total ranches involved. People could lose the connection of grazing on federal lands as a part of our history and culture.

   Without grazing livestock, fencing, gates and other range improvements, recreation users may have a more natural and less restrictive experience. Livestock grazing and permittee presence would no longer be visible on the Soda Creek/North Butte Allotment.

3. **Alternative 3 – (Historic Management) -** Continuation of the current situation would not create any further risk to the operation using forage from National Forest System lands. Outside forces, such as interest rates or fuel prices, could change the margin of profit for any operation regardless of AUMs grazed on National Forest System lands. There would likely be no change from the current situation due to Forest Service action. Visibility of livestock grazing, permittee activities, fences, gates and cattle guards would continue at current levels.

Short-Term Uses and Long-Term Productivity

The action alternatives would have short-term uses (livestock grazing) of rangeland resources in the Soda Creek/North Butte Allotment. The proposed adaptive management design criteria and monitoring described in Alternative 1 would ensure that long-term productivity and sustainability of rangeland resources in the allotment is maintained.

The No Action Alternative would result in no commercial livestock grazing and, therefore, no short-term rangeland use. No effect to long-term productivity would occur.

Irreversible and Irretrievable Commitments of Resources

Irreversible commitments of resources are those that cannot be regained, such as the extinction of a species or the removal of a mined ore. No irreversible commitments of resources would result from implementation of any of the alternatives because no permanent, irreversible resource loss would occur.

Irretrievable commitments of resources are those that are lost for a period of time and are likely to remain so, such as the

temporary poor condition of vegetation in an individual management unit. The gap between the current condition and the potential productivity would be an ongoing irretrievable loss. Irretrievable losses can be regained over time.

Alternative 1 (Proposed Action) - Under the proposed action, short-term rangeland vegetation loss (foraging, browsing, and trampling of vegetation) may occur in areas within the allotment. These losses would not be irretrievable because the vegetation would begin to recover to its potential productivity almost immediately if grazing were halted in the future.

Alternative 2 (No Action/ No Grazing) - No irretrievable commitments of resources would result from implementation of Alternative 2, the No Action Alternative, because no grazing would occur and, therefore, no significant resource losses of any kind would result.

Alternative 3 (Historic Management) - Similar to Alternative 1.

Effects Relative to Significance Factors - (10 findings required in the FONSI [reference 40 CFR 1508.27(b)]).

1. Beneficial and Adverse Impacts. Effects determinations are summarized in previous sections of this document and in supporting analysis located in the project record. All analyses prepared in support of this document considered both beneficial and adverse effects, but all effects determinations were made on the basis of only adverse effects. However, Lassen LRMP standards and guidelines and project specific integrated design features have been designed to reduce these impacts. Long-term benefits to adopting a new AMP have also been described in the other resource sections. Beneficial effects were not used in this analysis or supporting analyses to offset or compensate for adverse effects. Based on the above analysis as well as that within the project record, none of the adverse effects of this project would be significant, even when considered separately from the beneficial effects that occur in conjunction with those adverse effects.

The permittee for the Soda Creek/North Butte Allotment derives their primary income from their livestock operation and other agricultural activities for their family in the local community and the surrounding region. The ranch is a small to medium family cow-calf operation and may have one or more full time employees to assist with daily operations. The potential loss by the permittee may include selling cattle, the cost of feeding on their base property, the cost of leasing private pasture, and or loss of net revenue by reducing potential calf production as the number of productive cattle decreases. The operator is dependent on income from the affected allotment and might be temporarily or permanently forced out of the livestock industry or to attempt to establish operations elsewhere. Employees may also be adversely impacted through wage cuts or temporary or permanent job loss. Costs would be for maintaining existing structural improvements to protect riparian and aquatic resources and for monitoring utilization. Businesses that depend on livestock producers such as suppliers of agricultural implements, fencing materials, and supplemental feed may also be negatively impacted by reductions in livestock numbers on federal range. Businesses located elsewhere engaged in livestock transport as well as processing facilities may also face negative economic impacts due to decreases in livestock numbers on federal lands.

To summarize, this would result in a reduction of 54 cattle on the allotment, with an AUM loss of 218 AUMs. The most desirable alternative would be private pasture. If no private pasture is available the permittee may feed hay or sell the cattle. Plumas and Butte Counties would also lose revenue.

2. The degree to which the proposed action affects public health or safety - Livestock grazing has occurred within the allotment since the early 1900s. Public health and safety during this time has mainly been concerning Forest Roads or private/county maintained roads. Road maintenance and fencing have resolved most livestock concerns. Anticipated effects to public health and safety and related precautionary measures, include road signs or traffic controls (flaggers) in various areas as needed.

Livestock watering sources currently include various seeps and springs which receive relatively low use by the public. The Cold Springs water development near the PCT trail provides piped water, above the trough. Continuation of grazing on the allotment is not expected to adversely affect human health or noncompliance with applicable water quality standards although pathogens may be introduced to, and transported among surface waters by humans and other mammals.

Levels of E. Coli due to direct contamination from fecal material and urine would be high in areas of concentrated livestock use. However, due to a lack of surface water in many locations, and the distance between this allotment and any urban areas, there is little risk of water contamination from E. Coli bacteria. Any presence would drop below minimum State standards before it could reach private land and the use of water purification systems in all domestic water sources would eliminate any risk to the public.

Recreation use within the allotment is mostly limited to seasonal fishing, hunting, OHV trail use, hiking trails and camping at various undeveloped sites along the various creeks. The permittee maintains a summer residence on private lands within the allotment and frequently checks the livestock and fenced pastures. There is low potential for OHV use or dispersed camping to occur in fenced areas. Herd size, location, timing of use, and frequent checks by the permittee tend to reduce the risk of livestock/recreation conflicts within the Soda Creek/North Butte Allotment.

The proposed action would have no effect to public health and safety. The Soda Creek/North Butte Allotment is not considered open rangeland. Forest roads are not paved or fenced. When livestock are trailed or drifted, there may be a potential for vehicles colliding with livestock. However, these unpaved roads are designed as level 2 maintenance for high-clearance vehicles. The quality of the road reduces a vehicle's travel speed, thus there is minimum risk of having a vehicle collide with livestock.

3. Unique characteristics of the geographic area such as proximity to historic or cultural resources, park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas -

Historic or Cultural Resources - The area was probably first entered by prospectors in the 1850's because of its proximity to the gold fields of the Feather River. Major drainages such as Yellow Creek were routes for exploration. Early commercial freight and stage routes including the Humbug and the Chico-Humboldt roads (c 1860), pass through the area.

The Soda Creek/North Butte Allotment is located in the vicinity of Humbug Summit. Field Surveys of the allotment have been completed in compliance with Section 106 of the Histopric Preservation Act (NHPA), the Regional Programatic Agreement for Section 106 Compliance (RPA), and the LNF Grazing - Heritage Strategy. The results of the survey efforts have identified historic and prehistoric site distributed throughout the allotment. Some prehistoric properties are located in proximity to livestock use areas along Milkhouse Flat and Cold Springs. Historic properties are situated along the early Humbug and Chico-Humboldt roads, which are in the vicinity of some moderate or high use cattle areas (i.e., pastures, trailing routes). Cold Springs and upper meadow has been fenced. All properties will be monitored annually for rangeland effects.

Park Lands - The allotment is not near any Park lands.

Prime Farmlands, Wetlands - There are no prime farm lands in the allotment. The project area includes several several small spring-associated wet areas. To ensure that floodplains, wetlands, and watershed-related impacts are minimized, Best Management Practices 8.1, 8.2 and 8.3 are incorporated into the proposed action for Soda Creek/North Butte Allotment. Based on the analysis completed for wildlife, aquatic species, soils, hydrology, and botanical resources, riparian resource values will be protected through implementation of forage utilization standards. Riparian areas and wet meadows with wetland characteristics would be maintained in satisfactory condition. The proposed action would not have a significant adverse effect to wetland features.

There are fens present in many riparian areas within the allotment. The fens or potential fens have been delineated and conditions have been summarized in the Effects to Botanical Species Section. Use of standards and guidelines as discussed above would reduce any potential impacts and IDFs are incorporated into the proposed action for Soda Creek/North Butte Allotment. If future monitoring at fen locations shows impacts to the plants, project IDFs provide for protective measures, including fencing, to be taken.

Wild and Scenic Rivers - There are no designated wild and scenic rivers in the allotment.

Wilderness - There are no wilderness areas within the allotment. Butt Mountain Further Planning area lies north of Soda Creek/North Butte Allotment, partially within the Butt Creek Allotment which is vacant. The Cub, Chips, and Butt Mountain areas were also recommended for potential new wilderness as part of the RARE II process (977-1979). The Cub area also lies partially in the Butt Creek Allotment and the Chips area lies south of the Soda Creek/North Butte Allotment, in the vacant Chips Creek Allotment.

Ecologicaly Critical Areas -

rRNAs - Soda Ridge (1,295 acres) and Green Island Lake (1,210 acres) are recommended as Research Natura1 Areas to represent the white fir and bog vegetation types, respectively. The Green Island Lake Research Natural Area (GILRNA) was chosen as a representative of the Moss Bog vegetation type and is located win the allotment boundary. The GILRNA encompasses a lakes basin and the upper end of the Soda Creek Valley on the north slope of Soda Ridge. Livestock are not placed in the either area and these rRNAs are closed to grazing.

The Pacific Crest National Scenic Trail (PCT) runs through the center of the allotment and other (loop) trails connect to the PCT in this area. Dispersed camping occurs near the PCT at parking and camp areas near the crest including Cold Springs. Visual quality objectives include preservation or retention in the foreground of Soda Creek. Designated OHV routes also occur on Soda Ridge to provide access to the High Lakes area. Hiking, fishing, and camping also occur along Butte and Scotts John Creeks.

The Butte Creek House Pasture (90 acres) is State owned since 1986 (Butte Creek Ecological Preserve) and not part of the authorized grazing area although 30 acres of NFS lands in T26N R5E Sec. 28 was once included within the fenced area under a special use permit (1954-1986). Livestock are not placed in the either area and the fenced area is closed to grazing.

4. The degree to which the effects on the quality of the human environment are likely to be highly controversial - The effects of the proposed action are limited to Soda Creek/North Butte Allotment within the Lower North Fork Feather River and Butte Creek Subwatersheds. The effects of livestock grazing in this project area are known and they are not unique. While some people have disagreed with livestock grazing on public lands in general, no evidence has been identified showing that the environmental effects of these activities within the project would be cause of adverse effects to the human environment.

The level of controversy is referred to in this context as controversy within the scientific community. Anticipated

effects from continuing authorizing grazing and preparing a new AMP for the Soda Creek/North Butte Allotment is not considered highly controversial to the quality of the human environment in this regard. The Proposed Action would set maximum utilization levels consistent with Forest Plan Standards thus grazing utilization as proposed would not be considered as highly controversial.

No comments were received during public scoping as described in the Public Involvement Section of this document. The effects of proposed action on the human environment are not expected to generate substantial controversy.

5. Degree to which the possible effects on the human environment are highly uncertain or involve unique or unknown risks - Possible effects on the human environment are generally known and understood. The recognized potential effects resulting from grazing activities (as disclosed throughout the Environmental Consequences section) are supported by literature. Past monitoring, including in-stream monitoring, utilization, browse condition and trend, riparian health, and oak recruitment, indicates that grazing practices and associated impacts are similar to those associated with other allotments found within the Lassen Forest and Region 5.

Livestock grazing has occurred on western lands for more than a century. Many of the grazing practices that were incorporated decades ago are no longer used due to a better understanding of range conditions and effects of grazing on resource values. The Lassen National Forest has allowed livestock grazing since its inception, thus there are no unknown or unique risks involved in implementing the proposed action. In addition, use of standards and guidelines as discussed above would reduce any potential impacts.

Public scoping did not identify highly uncertain, unique, or unknown risks. The possible effects on the human environment are not highly uncertain nor do they involve unique or uncertain risks. The technical analyses conducted for determinations of the impacts to the resources are supportable with use of accepted techniques, reliable data, and professional judgment. The Forest Service has considerable experience with the types of rangeland management activities to be implemented. The effects analysis shows the effects are not uncertain, and do not involve unique or unknown risk.

6. The degree to which the action may establish a precedent for future actions with significant effects or represents a decision in principle about future consideration - Continued grazing on the affected allotment will not lead to another future action or actions that will have significant effects either individually or in combination with each other or with this action. There are no current plans to develop a new allotment within or around the project area, based on the decision to authorize grazing within the allotment. The decision is based on the premise of authorizing grazing privileges which are non-binding and revocable at the discretion of the deciding officer.

The proposed action would not establish a precedent for future actions, nor would it represent a decision in principle about a future consideration for other allotments. Any future decision to prepare other allotment management plans and modify term grazing permits would be analyzed separately and on their own merits to determine a future course of action. Future projects would require additional site-specific analysis and separate decisions as required under NEPA. This decision would apply only to this allotment and would be valid during the life of the AMP.

Activities in this Proposed Action that are outside the scope or require a Forest Plan amendment to implement would include Alternative 2. A Forest Plan amendment would be needed to permanently eliminate an allotment.

7. Whether this action is related to other actions with individually insignificant but cumulatively significant impacts - A cumulative effect is the consequences on the environment that results from the incremental effect of the action when added to the effects of other past, present, and reasonably foreseeable future actions (List of Cumulative Actions

-Appendix A). These effects are considered regardless of what agency or person undertakes the other actions and regardless of land ownership on which the actions occur.

The cumulative effects area is the boundary of the Soda Creek/North Butte allotment which lies in the following Management Areas (MA): MA 37 Butt Creek (30%), MA 44 Jonesville (45%), and MA 45 Soda Ridge (25%).

2005 CEQ memo and 36 CFR 220.4(f)) - The Forest Service has published Final NEPA Procedures (36 CFR 220) and in the procedures at 220.4(f), the essence of the 2005 CEQ memo is incorporated into the regulations. The approach to past actions in cumulative effects analysis follows:

In order to understand the contribution of past actions to the cumulative effects of the proposed action and alternatives, this analysis relies on current environmental conditions as a proxy for the impacts of past actions. This is because existing conditions reflect the aggregate impact of all prior human actions and natural events that have affected the environment and might contribute to cumulative effects.

This cumulative effects analysis does not attempt to quantify the effects of past human actions by adding up all prior actions on an action-by-action basis. There are several reasons for not taking this approach. First, a catalog and analysis of all past actions would be impractical to compile and unduly costly to obtain. Current conditions have been impacted by innumerable actions over the last century (and beyond), and trying to isolate the individual actions that continue to have residual impacts would be nearly impossible. Second, providing the details of past actions on an individual basis would not be useful to predict the cumulative effects of the proposed action or alternatives. In fact, focusing on individual actions would be less accurate than looking at existing conditions, because there is limited information on the environmental impacts of individual past actions, and one can not reasonably identify each and every action over the last century that has contributed to current conditions. Additionally, focusing on the impacts of past human actions risks ignoring the important residual effects of past natural events, which may contribute to cumulative effects just as much as human actions. By looking at current conditions, we are sure to capture all the residual effects of past human actions and natural events, regardless of which particular action or event contributed those effects. Third, public scoping for this project did not identify any public interest or need for detailed information on individual past actions. Finally, the Council on Environmental Quality issued an interpretive memorandum on June 24, 2005 regarding analysis of past actions, which states, “agencies can conduct an adequate cumulative effects analysis by focusing on the current aggregate effects of past actions without delving into the historical details of individual past actions.” For these reasons, the analysis of past actions in this section is based on current environmental conditions.

Design features included in the proposed action would avoid or minimize adverse cumulative watershed effects and also protect plants, wildlife, aquatic species, and other sensitive resources to the extent that any residual effects would not be cumulatively significant. Biological Evaluations and Watershed Analysis that disclose cumulative effects, as well as direct and indirect effects, are in the project file and available from the District office. Resource protection design features included in those reports are: Protect known archaeological sites by instituting adaptive management procedures that would keep livestock away from historic properties. Maintain a minimum cover height of 4 inches of herbaceous vegetation in mountain meadows. Utilize Best Management Practices for livestock grazing activities.

i) Cumulative effect of this proposal combined with other grazing programs on Federal and private land.
The Soda Creek/North Butte Allotment was chosen as the cumulative effects analysis area since surrounding allotments (Butt Creek, Butte Meadows, Chips Creek, Coon Hollow) are vacant. A portion of the private lands within the allotment are grazed. Other private lands within the allotment are grazed minimally or not grazed. The allotment’s boundary follows topographical features and herding and fences are used to control livestock movement. Effects of grazing on Forest Service lands, when combined with grazing activities on lands of other

ownership, do not create significant cumulative effects. The proposed forage utilization levels are within Forest Plan Standards, thus further reducing the potential for cumulative effects.

Previous actions or projects listed in the List of Cumulative Actions (Appendix B) may have provided, or are providing, transitory grazing opportunities for livestock where more open forest habitat was created. These actions or projects have not resulted in major changes in grazing use on the allotment.

ii) Cumulative effects to soil and water resources.
Cumulative effects of land disturbing activities can occur on-site or downstream of the activity. On-site effects include changes to soil characteristics from multiple activities such as wildlife grazing, use of heavy equipment, or unrestricted off highway vehicle use. Downstream effects may include changes in amount and timing of overland and concentrated water flow and input of sediment. Past, present and foreseeable future effects that were considered include wildfires, and related treatments, livestock grazing, wildlife, recreation and travelway use, private land, and past watershed improvement projects.

Considering the complexities presented by inter-mingled private lands, steep slopes and rocky soils within the allotment (27,267 NFS acres) compared to the relatively small area of adjusted primary range that would be utilized for trailing and grazing (approximately 1,555 acres), the project would not result in any measurable increase in cumulative watershed effects.

Some instability is evident in some channels, but appears to be the result of past grazing activity rather than higher flows. Channel conditions in this area may be stable or improving on adjacent vacant allotments (Butt Creek, Butte Meadows, West Humbug, Coon Hollow, Chips Creek Allotments). Some of the Soda Creek canyon area flooded and a large flood may have occurred in the 1990s before the Storrie fire. There were also floods in the 80's and 90's, which cut down Soda Creek.

There are no known EPA designated impaired watersheds within the allotment boundary but Butte Creek may be proposed since a portion was sampled (35 miles downstream from the Forest Boundary) and listed as having pH concerns potentially due to resource extraction. Restoration planning is ongoing. No subwatersheds are known to be exceeding its Threshold of Concern although the Little Grizzly drainage may be close to threshold, as well as the North Fork of Willow Creek area (above Cold Springs).

iii) Cumulative effects to wildlife species.
Based on information contained within BE/BAs in the project record, there would be no significant cumulative effect to those species by implementing the Proposed Action alternative.

Continued management of fenced meadows would favor those wildlife species that prefer open montane meadow or wetland conditions. Recent management including fencing and managed grazing in the LT and Ben John areas has mitigated many of past grazing effects to the aquatic habitats within this allotment. Cumulative effects to aquatic species would not be significant.

American Marten - The cumulative effect to this species would be from forest management practices associated with stand thinning, fuels reduction and post fire salvage (i.e. Storrie Fire). A detailed discussion of cumulative effects for this area is provided by Williams in the Creeks BE/BA (2005). Potential for reduction in the quality of prey habitat would be very marginal and limited in scope across the allotment.

California Spotted Owl - A detailed cumulative effects analysis is provided in the Creeks BE/BA (Williams 2005). In summary, past vegetation management projects have led to reductions in CSO habitat value. Though this

report determined that ongoing range management would unlikely provide further cumulative effects as they would not affect habitat values for spotted owl (ibid).

Northern Goshawk - A detailed cumulative effects analysis is provided in the Creeks BE/BA (Williams 2005). In summary, past vegetation management projects have led to reductions in NGO habitat value. Though this report determined that ongoing range management would unlikely provide further cumulative effects as they would not affect nesting habitat values. Grazing may marginally affect foraging habitats in small forested openings and along the margins of meadow areas. Potential for reduction in the quality of prey habitat would be very marginal and limited in scope across the allotment.

Pallid Bat - Grazing and other disturbances may favor grasshopper species, which could in turn increase numbers of one type of prey for pallid bats. However, Chung-MacCoubrey (1996) notes that "…there is an insufficient number of studies to provide a comprehensive overview of the effects of grazing and fire suppression on arthropod community composition, structure and distribution". Periodic disturbance, either from grazing or prescribed fire, which reduces height or density of vegetation, may enhance the structure of foraging habitat for pallid bats. Reduced clutter from vegetation and litter eases the foraging ability of echolocating bats in search of terrestrial prey. Grazing activities may enhance prey abundance and foraging structure for pallid bats within the allotment. However, foraging habitat overall appears to be very low in quality and very limited in quantity.

Sierra Nevada Red Fox - The cumulative effect to this species would be from forest management practices associated with stand thinning, fuels reduction and post fire salvage (i.e. Storrie Fire). A detailed discussion of cumulative effects for this area is provided by Williams in the Creeks BE (2005). In the Conservation Assessment for red fox (Perrine et al. 2008), it is noted that conservation and recovery of SN red fox will require the retention of sufficient habitat for red fox and their prey, along with sufficient habitat connectivity throughout its range. Forest management activities, including fire suppression and livestock grazing may have impacts on habitat suitability and connectivity of the red fox and its prey. Potential for reduction in the quality of prey habitat would be marginal and limited in scope across the allotment. Future integrated design features of this project and aspen/riparian restoration efforts of other foreseeable projects may favor increased prey abundance of snowshoe hare and other lagomorphs.

Willow Flycatcher - The presence of cattle grazing in close proximity (2 to 4 miles) to occupied nest sites at Butt Creek Allotment (vacant) may provide a risk of cowbird brood parasitism by attracting cow birds to the area. This is particularly of concern when livestock are concentrated into closed facilities such as holding pastures and then feed supplemental grains; waste grain and manure associated insects can attract cow birds. However, cow birds appear to be in much lower numbers when associated with livestock foraging on native meadow herbaceous vegetation or pelletized food (USFS 2001), which is the situation for this allotment.

iv) Cumulative effects to Sensitive and Special Interest plant species.

A cumulative effect can result from the incremental impact of the action when added to the effects of past, present, and reasonably foreseeable future actions. Past activities are implicitly considered by reviewing existing conditions, since these reflect the residual impacts of all prior human actions and natural events that have affected the environment and might contribute to cumulative effects. By looking at current conditions now, we capture the effects of such actions and events collectively, regardless of the contributions of particular actions or events.

The project area was chosen as the cumulative effects analysis area for *Botrychium* and *Meesia* spp. and *Silene occidentalis* ssp*. longistipitata*, and *Botrychium simplex, Claytonia palustris, Eriophorum gracile, Penstemon heterodoxus* var*. shastensis,* and *Stellaria obtusa* because their historic range and specific habitat requirements are

unknown, and it was assumed that if the Soda Creek/North Butte project would not affect the viability of the species within the project area, it would not affect their viability outside of the project area. Past, ongoing or future vegetation treatments on private lands may have had cumulative impacts to the species under consideration here, but since survey requirements and mitigations for their occurrences are not known, the nature and extent of the impact to the species cannot be quantified.

Past activities known to have occurred within the project area include timber harvest and other vegetation management actions, Christmas tree permits, roads maintenance activities, and various recreation activities, such as hiking and camping, OHV use, and hunting. Past actions are implicit within existing conditions and are addressed within occurrence summaries above.

Ongoing vegetation management projects, special uses, and recreation projects on the District have been surveyed to similar standards as the Soda Creek/North Butte Project. As with the Soda Creek/North Butte Project, known occurrences of Sensitive plant species for which viability was a concern have either been avoided by project activities or protected by Integrated Design Features that minimize impacts to known populations. Ongoing actions such as road maintenance and firewood gathering contribute only incidental, if any, effects to the two species of *Meesia*. The impacts of these activities are highly dispersed throughout the project area, and most would not occur within the wet, open places where *Meesia* plants occur. The same can be said of *Botrychium* occurrences, although the plants can grow in somewhat more wooded conditions than *Meesia. Silene occidentalis* ssp*. longistipitata* favors semishaded habitat (10-50% canopy closure) in mid-elevation mixed conifer forest or black oak woodland. These areas are not destination spots for firewood gatherers, and none of the known occurrences are adjacent to roads where maintenance activities could impact individuals.

For ongoing vegetation management, special use, and recreation projects, known occurrences of Special Interest plant species for which viability was a concern have either been avoided by project activities or protected by IDFs that minimize impacts to the occurrences. Timber or firewood removal is unlikely to contribute more than incidental effects to the species under consideration here: *Claytonia palustris* and *Eriophorum gracile* occur in wet, open habitats without closely associated timber. *Botrychium simplex* and *Stellaria obtusa* may occur in somewhat more wooded, shaded conditions - tree removal at these sites could conceivably introduce desiccating sunlight, but the plants are usually associated with willows and/or alders that will maintain their growth conditions. *Penstemon heterodoxus* var. *shastensis* is oriented to meadow or meadow-edge conditions and may actually benefit from nearby tree removal.

For all these species recreation will have at most incidental effects. Recreation within the Soda Creek/North Butte area is highly dispersed except along the Pacific Crest Trail and connector trails and scattered campgrounds, which do not contact any of the sites for TES or Special Interest plants. Other than the Pacific Crest Trail, there are no summer homes, paved roads, or other infrastructure in the Soda Creek/North Butte project area to attract concentrated human traffic.

Roads and recreational traffic have potential to facilitate the introduction and/or spread of weeds on the Forest and therefore to contribute cumulatively to effects on TES plant habitat on the Forest. Noxious weeds generally cause permanent habitat degradation and can compete with TES plants, making the habitat less suitable for them and other desirable species. Nonetheless, with the implementation of IDFs, weed issues in the Soda Creek/North Butte project area are unlikely to intensify from their presently low level. For Special Interest plant species, road maintenance probably contributes no effects to the species under consideration here, since none of the occurrences contact roadways.

Foreseeable future actions include vegetation management treatments under the following projects: Creeks II Forest Restoration Project; Lotts Aspen, Oak, & Pine Enhancement Project; Rust Resistant Sugar Pine Maintenance Project; and Scotts John Forest Health Recovery Project. These and other future actions within the project area would be adequately surveyed for TES and Special Interest plant species. Any species for which viability was a concern would either be avoided by project activities or mitigated by protect IDFs. The implementation of the Forest-wide Motorized Travel Management Plan will close the Forest to cross-country travel and will eliminate the use of some unauthorized routes within the project area, which will, if anything, enhance the integrity of the habitats where TES plants occur. Cumulative effects from noxious weed introduction and/or spread related to other projects are possible; however, given the low incidence of weeds across the area and the generally low vulnerability of its habitats to weed invasion, with the implementation of IDFs, weed issues in the project area are unlikely to intensify.

In sum, there are few if any effects to species of *Botrychium* or *Meesia* from any known ongoing or reasonably foreseeable future actions in the Soda Creek/North Butte project area that would likely add cumulatively to project-related direct and indirect effects. On the Lassen National Forest, *Botrychium ascendens* is the rarest of three moonworts under consideration, with only 10 occurrences known; *B. minganense* has 27 occurrences and *B. montanum* 29. Most occurrences on the forest are stable, but several may have been lost during a past major storm event. All three species, though rare, are widely distributed across western North America.

Meesia triquetra and *M. uliginosa* both are widespread at high latitudes around the world but rare at lower latitudes like California's. The Lassen National Forest has 48 occurrences of *M. triquetra* but so far only seven known occurrences of *M. uliginosa*; however, and most known occurrences outside the project area are stable. *Silene occidentalis* ssp. *longistipitata* is endemic to northeastern California and has nine occurrences on the Lassen National Forest, one of which may have been extirpated. The Scotts John occurrence has been stable for many years, and future vegetation treatments might, if anything, may enhance habitat for *Silene occidentalis* ssp. *longistipitata* within the project area. Overall, due to Integrated Design Features and the Adaptive Management Strategy for TES plants and Fens implemented as part of the proposed action, the Soda Creek and North Battle Allotments project will not affect the viability of any Sensitive plant species within the project area. In addition, if future impacts are recorded to these species or their habitats, steps will be taken to eliminate or mitigate these impacts so that the viability of these species will be maintained within the project area and throughout their range.

There are also few if any effects to *Botrychium simplex, Claytonia palustris, Eriophorum gracile, Penstemon heterodoxus* var. *shastensis, or Stellaria obtusa* from any known past, present, or reasonably foreseeable future actions in the Soda Creek/North Butte project area that would likely add cumulatively to project-related direct and indirect effects. Though few occurrences of *Botrychium simplex* and *Eriophorum gracile* are yet recorded on the Lassen National Forest, both species have global distributions. *Eriophorum gracile* is a recent addition to the Special Interest list on the Forest, and it is very likely that more occurrences will be recorded. *Botrychium simplex* is the second most common species of *Botrychium* in California: the species has been collected throughout the Sierra Nevada, as well as in the Warner, San Bernardino, and other California mountains, and there are six other occurrences on the Lassen National Forest. Should either *Botrychium simplex* or *Eriophorum gracile* suffer impacts in the Soda Creek/North Butte project area, it would not likely affect their viability across the Forest or their overall range. That is also true for *Claytonia palustris*, which is restricted to northern California but is rather frequent across the Almanor Ranger District, and very much true for *Stellaria obtusa*, which is widely distributed across the West, from California to British Columbia to Montana to Colorado, and has numerous occurrences across the Almanor Ranger District. The viability of *Penstemon heterodoxus* var. *shastensis*, a northern California endemic with 20 known occurrences scattered across the three districts of the Lassen National Forest, is also unlikely to be affected by any deleterious impacts at its Sawmill Tom site. Even in the event that plants at occurrences of any of

these species suffered impacts, there would be no effect on the viability of the species in the Soda Creek/North Butte project area or across their range.

8. The degree to which the action may adversely affect districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places or may cause loss or destruction of significant scientific, cultural, or historical resources - Field surveys of the allotment have been completed in compliance with Section 106 of the Historic Preservation Act (NHPA), the Regional Programmatic Agreement for Section 106 Compliance (RPA), and the LNF Grazing-Heritage Strategy. The results of these survey efforts have identified historic and prehistoric sites distributed throughout the allotment.

Prehistoric properties are located in proximity to livestock use areas near Milkhouse Flat and Cold Springs. The Cold Springs area is fenced. The other historic properties are situated near early commercial freight and stage routes, the Humbug and the Chico-Humboldt roads (c 1860) but are outside of moderate or high use cattle areas (i.e. pastures, trailing routes). All properties will be monitored annually for rangeland effects.

9. The degree to which the action may adversely affect an endangered or threatened species or its habitat that has been determined to be critical under the Endangered Species Act of 1973 - In compliance with the Endangered Species Act and Lassen LRMP, biological reports (BE/BA) were completed for listed and sensitive wildlife and plant species and is incorporated by reference and available from the District upon request. The following determinations were made as supported by those reports.

Terrestrial Wildlife Species - No federally listed terrestrial wildlife species exist within or adjacent to the allotment boundary: Will not affect the following species nor affect any designated critical habitat: Giant garter snake (Federally listed as Threatened (FT)), northern spotted owl (FT), Pacific fisher (Federal candidate for listing (FC) and Forest Service Sensitive (FSS)), Valley elderberry longhorn beetle (FT), western yellow-billed cuckoo (FC), because the project area is outside the range of these species and/or lacks suitable habitat.

Botanical Species and Habitats - There are no federally listed threatened or endangered plant species within the analysis area.

Aquatic Species and Habitats - The Biological Assessment of Proposed and Listed Threatened and Endangered Species of Anadromous Fish for Range Allotments (USFS, 1998) made the determination that the permitted use of the Soda Creek/North Butte Allotment would result in a "Not Likely to Adversely Affect (NLAA)" regarding the Central Valley spring-run Chinook salmon (*Oncorhynchus tshawytscha*) and Central Valley Steelhead (*Oncorhynchus mykiss*). Revaluation of potential effects to the above listed species was completed under the assumptions of the Proposed Action, and it was determined that this project would result in a "No Affect" to Central Valley spring-run Chinook salmon and Central Valley steelhead. This updated determination was based on the proposed implementation of Best Management Practices (BMPs), Integrated Design Features (IDFs), adaptive management strategies, and monitoring set forth and described in the AMP for this allotment. In summary, the largest risk to anadromous fisheries resulting from this project is increased erosion and transport of fine sediments to downstream habitats. As both populations of anadromous fish are located approximately twenty miles downstream of the allotment boundary, and that any on-site bank erosion and resulting sediment input into the channel would be negligible, affects downstream would not be detectable.

10. Whether the actions threaten a violation of Federal, State, or local law or requirements imposed for the protection of the environment - The proposed action would not threaten a violation of Federal, State, or local law, or requirements imposed for the protection of the environment. The proposed action is fully consistent with the

Endangered Species Act (see #9 above). This EA is also in full compliance with the National Environmental Policy Act of 1969.

The proposed action is fully consistent with the Lassen LRMP as amended and is consistent with the National Forest Management Act (NFMA) of 1976. NFMA requires all projects to be consistent with the following elements: (a) resource protection; (b) vegetation manipulation; (c) silvicultural practices; (d) even-aged management; (e) riparian areas; (f) soil and water; and (g) diversity. Only resource protection and soil and water elements apply to this proposal. Livestock grazing under terms and conditions of the proposed action would not cause significant impairment to land productivity and would incorporate resource protection measures (see discussion on effects in section above). Allotment Management Plan standards and guidelines would reduce the potential for soil erosion and impacts to water quality. Standards and guidelines and BMPs would protect soil and water resources by avoiding or mitigating impacts. Thus, this proposal would be compliant with NFMA.

Forest Service Sensitive (FSS) Terrestrial Wildlife Species - A BE/BA report prepared for the allotment analysis has made the following determinations regarding implementation of the proposed action (Alternative 1): Under the proposed action Alternative 1, Determination of Effects there will be no effect on: bald eagle, California wolverine, northwestern pond turtle, Pacific fisher (FC, FSS), Swainson's hawk, Townsend's big-eared bat, western red bat, American marten. Will have no adverse effect on: California spotted owl within the allotment. May affect individuals but is not likely to lead to a trend toward federal listing of: American marten, northern goshawk, pallid bat, Sierra Nevada red fox and willow flycatcher.

Forest Service Sensitive (FSS) Plant Species - The BE/BA report for Federally listed and Forest Service Sensitive Plant Species has made the following determinations regarding implementation of the proposed action (Alternative 1): The action may affect individuals or habitat of *Botrychium ascendens*, *B. minganense*, *B. montanum*, *Meesia triquetra*, *M. uliginosa*, or *Silene occidentalis* ssp. *longistipitata* but is not likely to result in a trend toward Federal listing as Threatened or Endangered or in a loss of viability for these species.

Special Interest Plant Species - There may be incidental effects, but with no decline in species viability, for *Botrychium simplex, Claytonia palustris, Eriophorum gracile, Penstemon heterodoxus* var. *shastensis* and *Stellaria obtusa.* No effects to *Polystichum lonchitis, Carex limosa, Drosera anglica, Potamogeton robbinsii* and *Sparganium nutans.*

Forest Sensitive Aquatic Species - Historical sightings of Cascades frogs within or in the vicinity of the allotment include Yellow Creek and Grizzly Creek drainages in 1961 and 1975, respectively. Currently, the nearest populations exist in Willow and Colby Creeks which are tributaries to Butte Creek, but are located outside of the allotment boundary. Suitable habitat is still present in a number of perennial stream habitats within the allotment, but no individuals have been observed over numerous intensive surveys. Therefore, the project may affect individuals or their habitat, but are not likely to cause a trend towards federal listing for the following FS sensitive species: Cascades frog (*Rana cascadae).*

Management Indicator Species (MIS) and Management Emphasis Species - Based on the MIS analysis, MIS would not be at risk as a result of activities planned under the proposed action (Alternative 1). No effects or minimal effects are expected to Pacific tree frog, mountain quail, benthic macro-invertebrates from allotment activities because most are found along creek areas which are inaccessible to livestock or include grazing and IDFs would also minimize effects. Minimal effects to some management emphasis species including black bear are expected.

Riparian Hardwoods - Minimal effects to some riparian shrubs including willow, cottonwood, alder, and aspen, are expected. IDFs in a revised AMP would minimize effects.

Air Quality - The Proposed Action would not have any impacts on air quality. The allotment is within the Northern Sierra Air Quality Region. This proposed action would not violate ambient air quality standards and would be consistent with the Federal Clean Air Act of 1977.

Noxious Weeds - The Soda Creek/North Butte project area contains three sites of Canada thistle, a CDFA B-listed noxious weed species with moderate priority for treatment. In addition, two C-listed weed species with low priority for treatment, yellow starthistle and bull thistle, also have occurrences inside the Soda Creek/North Butte Allotment. Creek corridors are somewhat vulnerable to noxious weed invasion, but the landscape is dominated by slopes clothed in weed-resistant heavy forest and chaparral so overall vulnerability is low. In addition, non-project vectors, project related habitat alteration, and increased project-related vectors also carry a low risk of noxious weed spread in the project area. Overall, with incorporation of Integrated Design Features as part of the Proposed Action, there is a low potential for weed spread with the implementation of the Livestock Grazing Management Project decision for the Soda Creek/North Butte Allotment.

AGENCIES AND PERSONS CONSULTED

Federal, State, and local agencies, tribes, and non-Forest Service persons who were consulted during the planning process are listed on the 3/11/2009 and 8/12/2009 allotment mailing lists.

Documents Incorporated by Reference - Documents that are referenced are cited at the point of reference in the EA.

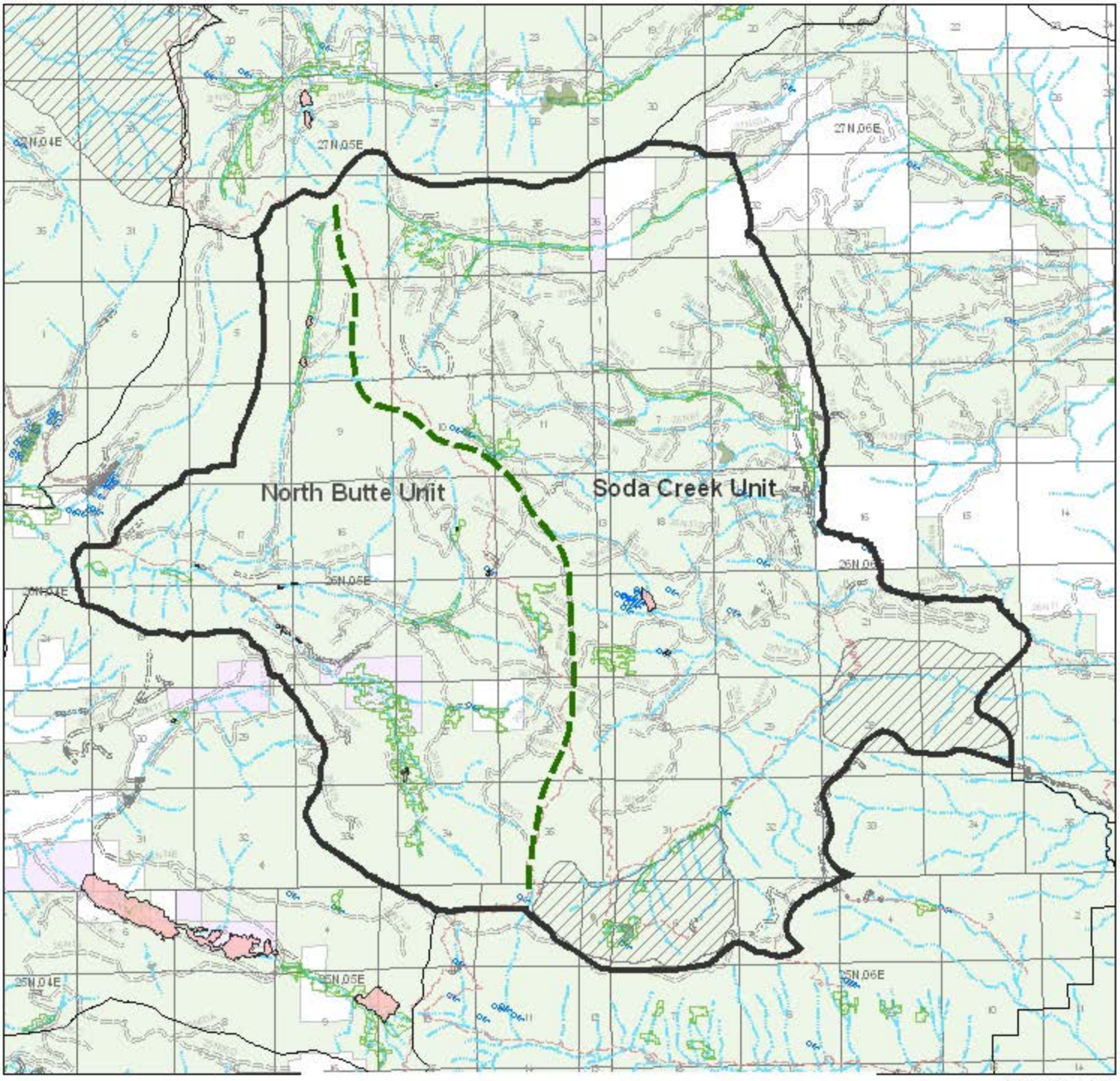
Appendices

App. A Allotment Management Plan

Maps

Map 1 Allotment Boundary
Map 2 Range Improvements, Areas Closed to Grazing
Map 3 Key Areas

Soda Creek/North Butte Allotment



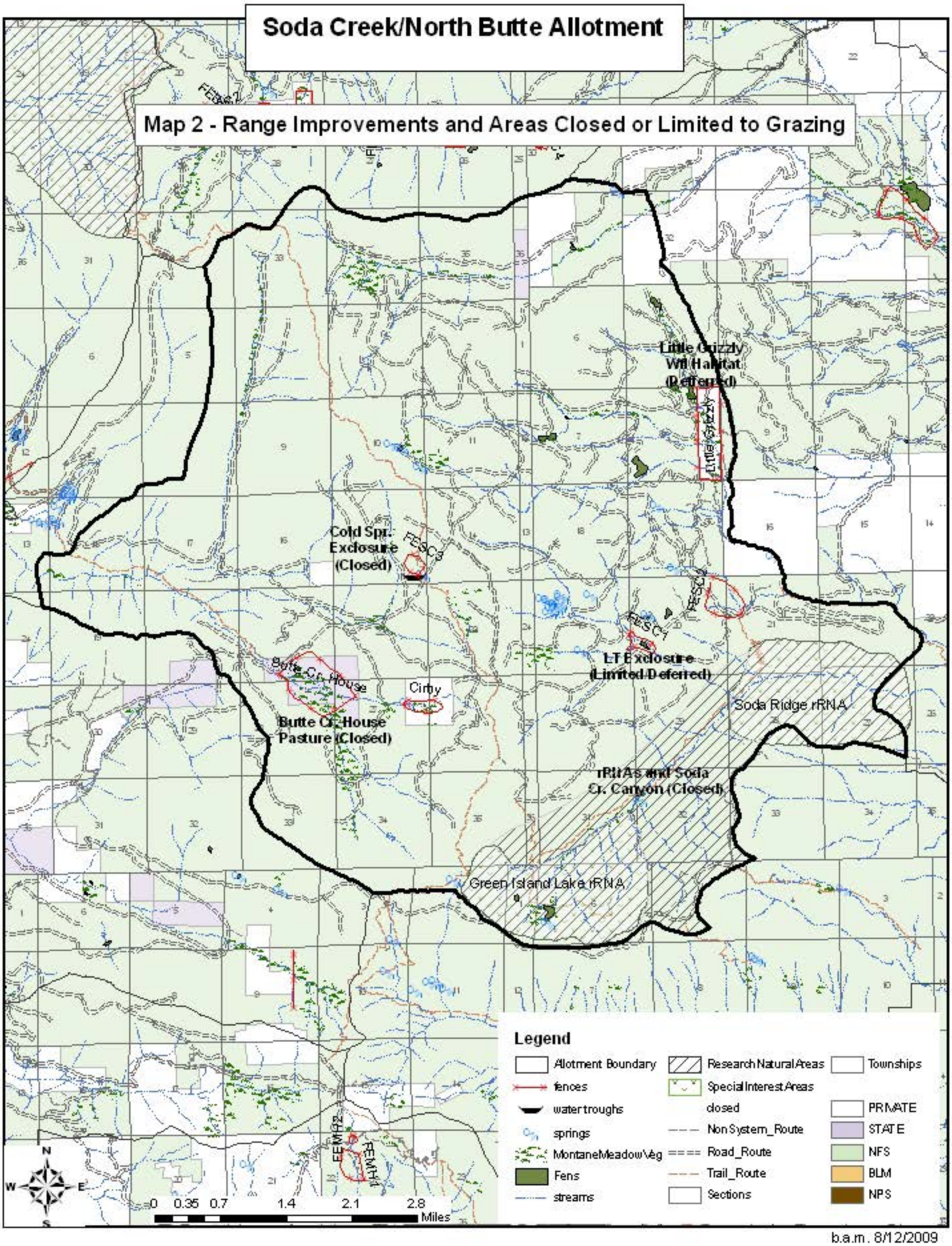
b.a.m. 3/2/2009

Legend

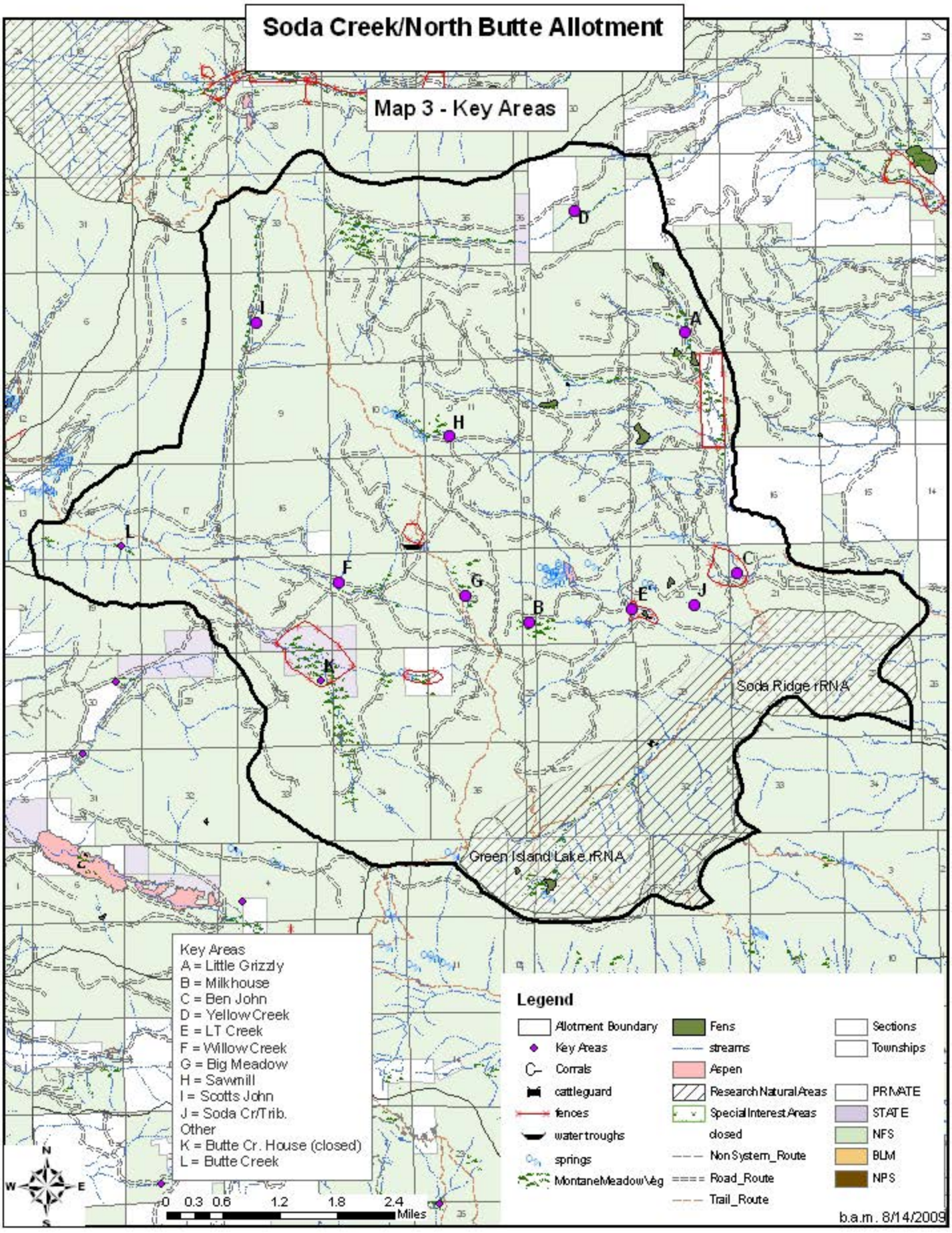
- Allotment Boundary
- Aspen
- Fens
- MontaneMeadow\Veg
- Research Natural Areas
- Roads
- Non System_Route
- Trail_Route
- springs
- Streams
- Townships
- Sections
- Private
- State
- NFS
- BLM
- NPS
- Unit/division boundary

N W E S

0 0.25 0.5 1 1.5 2 Miles


Soda Creek/North Butte Allotment
Map 2 - Range Improvements and Areas Closed or Limited to Grazing
Little Grizzly Wtl Habitat (Deferred)
Little Grizzly
Cold Spr. Exclosure (Closed)
FESC3
FESC2
FESC1
LT Exclosure (Limited/Deferred)
Butte Cr. House
Cirby
Butte Cr. House Pasture (Closed)
Soda Ridge rRNA
rRtAs and Soda Cr. Canyon (Closed)
Green Island Lake rRNA
FEMH2
FEMH1
Legend
Allotment Boundary
fences
water troughs
springs
MontaneMeadow\Veg
Fens
streams
Research Natural Areas
Special Interest Areas
closed
Non System_Route
Road_Route
Trail_Route
Sections
Townships
PRIVATE
STATE
NFS
BLM
NPS
N
W
E
S
0 0.35 0.7 1.4 2.1 2.8
Miles

b.a.m. 8/12/2009


Soda Creek/North Butte Allotment
Map 3 - Key Areas
A
B
C
D
E
F
G
H
I
J
K
L
Soda Ridge rRNA
Green Island Lake rRNA
Key Areas
A = Little Grizzly
B = Milkhouse
C = Ben John
D = Yellow Creek
E = LT Creek
F = Willow Creek
G = Big Meadow
H = Sawmill
I = Scotts John
J = Soda Cr/Trib.
Other
K = Butte Cr. House (closed)
L = Butte Creek
N
W
E
S
0 0.3 0.6 1.2 1.8 2.4
Miles
Legend
Allotment Boundary
Key Areas
Corrals
cattleguard
fences
water troughs
springs
MontaneMeadow\Veg
Fens
streams
Aspen
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b.a.m. 8/14/2009